THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXIII.—No. 3892. SEPTEMBER 7, 1917.

ECONOMIES IN BUILDING.

THE economies possible in building mainly fall under one of two heads, the first of which is economy in space and the avoidance of unnecessary complication and detail, and the second the economy connected with designing a building so that the internal arrangements can be altered with the least possible expense and disturbance. If we take our commercial buildings fronting streets, the two essential things necessary are abundant light back and front and the elimination of every unnecessary pier, column or wall. Such a building, whether used as shop, office or warehouse, is likely to suit any tenant who can put up the subdivisions needed for his own business. Staircases should be placed in positions in which they interfere as little as possible with possible divisions of floor areas, and should not be unnecessarily wide. All roofs should be flat, excepting where a building is sufficiently wide to render the inevitable gutters abutting on to party walls a matter of relative unimportance, for the pitch roof as used in town buildings is a survival of the independent and detached buildings which lined our streets centuries ago and of the period when girders, excepting in the form of solid oak beams, were unknown, and when the flats were always covered with lead of heavy weights. The use of concrete, ferro-concrete, steel and asphalt have altered the whole practical aspects of the problem, just as the fact that businesses seldom remain in one family for many generations and commercial values in localities are constantly altering, has made it unwise to incorporate permanent features in building to suit one occupier, in view of the probability that the life of the building will exceed the length of time it will be required for its original purpose. Economy in our street buildings, in a word, must largely depend on their suitability for a number of different purposes. It goes without saying the heating and ventilation should be carried out without fireplaces, and that the systems employed should be large enough to be economical in working. If a considerable estate were in the hands of the same landlords it would sometimes be economical to adopt a system of heating for a group of buildings, and include the charge for such services in the rent. Such a method will be disliked by those who think all our buildings should be a collection, as in the past, of individual designs, but we think that in the business parts of our towns the possibility of harmonious and effective individual design is gone and that in the streets of the future the heights of stories, of main cornices, and even the divisions of frontages should, in the interests of economy and of amenities of design, be fixed, and the trader should build or lease so many units of street frontage, fixed according to a comprehensive scheme; in other words, the buildings of our commercial quarters may be best treated like the stalls of a well-regulated market, which is what they really resemble in essence. If frontages are treated architecturally in short lengths there is often much waste of masonry and brickwork, and sometimes an awkward distribution of windows over to give the necessary architectural emphasis at the abutments of short divisions of the front, whereas such difficulties are more easily solved where, as in the case of Nash's Regent-street, wider and simpler units are aimed at. The business quarters of our towns should in fact be continuous blocks of floor spaces, divided by the minimum number of cross walls and cut up into the smallest number of separate units within, in which the separate traders should make temporary screens and divisions, and, in the interests of architectural appearance and also we claim of economy, a uniform system of lettering and of shop signs should be adopted.

To carry out such a system in its entirety, we should have to wait until an opportunity occurred of a comprehensive scheme of rebuilding, where an estate was in the same ownership; and where this is not so, the local authority would have to lay down a general scheme to which individual owners who were rebuilding should conform; and where the old irregular boundaries of private ownership would make the carrying out of big schemes impossible a system of mutual compensation and adjustment might be arranged. Kingsway is a proof that the old haphazard system is wrong; old Regent-street that the system we advocate is right—for even when the individualistic system is the work of good architects, the results are disappointing; while the adoption of the other method we advocate would give definite satisfaction, even were the best general design not produced.

With our domestic buildings other considerations come into play, and where buildings are detached we may well expect a more characteristic and personal note. The greatest economy in house building, in service and in first cost, will probably be arrived at by the almost complete elimination of the open fireplace in favour of a central heating system and in the divorce of cooking from hot-water production for domestic purposes. We are not at all sure that the path to economy does not lie in the direction of a reduction in the size of the ordinary bedroom, which, treated as it might be, with a recess for bed and with cupboards and with carefully placed doors and windows, might take a form somewhat resembling the sleeping bunk of a ship. Space in sitting rooms, which are used constantly for a variety of different purposes, is of far greater importance than space in bedrooms, as long as bedrooms are well ventilated and conveniently arranged; but the only instances in which scientific planning is called into play for ordinary purposes is in some of the dwellings for the very poor and municipal lodging houses. We do not mean by this that architects are at fault, for the average house is a reflection of the wants of the average man and woman, whose necessities include a good many superfluities for which they have to pay; while a good many things which would diminish labour and conduce to comfort, such as the provision of constant hot water and of two and sometimes more bath rooms and central heating to a house, are considered as luxuries. It is absurd that in most houses getting up and going to bed in a hard winter should be ordeals when there are means to obviate discomfort; while, at the same time, we spend money on bedroom fireplaces which are seldom used and in addition keep a number of things which take up space and require dusting but which are never used and are often of doubtful aesthetic value.

It is difficult to say whether the pitch roof will ever be abandoned in our houses, but with the continual improvement of methods of constructing flat roofs the economy of the pitch roof becomes more and more questionable. We often say of a house we don't like that, it is like a brick box; but we seldom stop to think that a square box gives us more room than one of fanciful shape, and that the first requirement in building is space and the second the convenient distribution of that space. Many of the cherished forms in old building are the result not of the aesthetic instincts of our forefathers but of their lack of the knowledge and appliances we have now at hand, and it is quite possible that with advancing time we shall give up first one cherished form and feature and then another, finally waking up to discover we have evolved new forms wholly differing from those of the past, but having a character and fitness of their own. If we can reason out and discover by logical thought what is, and will be, necessary, the greatest economy will be to build it in permanent form; if not, we may be wise in looking on a large proportion of our buildings as temporary structures and in building them avowedly on those lines.

NOTES.

The War Museum.

A VIGOROUS Press campaign is being carried on in favour of the scheme for providing a War Museum, and it is quite possible that those who do not endorse the proposals made will be looked upon as lacking in patriotism, but such a criticism would not be justified by facts. There can be little doubt of the interest and enthusiasm roused by the South African War, but how many of us would care to spend hours in a building filled with relief models of Ladysmith, Mafeking and Pretoria, with trophies of the fights which were taking place over a period of three years, and copies of the Boer and British proclamations and models of Long Toms? We know that the present crisis is an infinitely greater one, but similar conditions will have weight when it is over. To the student of military history, or the colonial administrator, the history of the South African War is a useful and interesting field of study; to our army it was an invaluable experience which enabled it more readily to cope with the great emergency of 1914, while our people then, as now, voluntarily gave up their occupations at the national call. But we imagine that those who have been most zealous in the performance of duties arising out of the war will be most anxious, when it is over, to turn to other thoughts and occupations, and that the country will be too weary to wish to artificially stimulate the memory of a long nightmare when the whole population will be busy in hundreds of ways in aiding the forces of Reconstruction. The military student, the historian and the scientist will not require a museum which will neither serve purposes of education nor of amusement, and if a great memorial of the war is to be built, as we hope will be the case, we should like to see it take the form of a great bridge at Charing Cross or a memorial chapel at Westminster, or of both, and we should not be surprised if those who have done most for their country were less keen than others in advocating the erection of the much-discussed War Museum.

The Blackpool Housing Conference.

A conference promoted by the Workmen's National Housing Council has recently held a meeting at Blackpool, and passed some of the usual drastic resolutions so much beloved by those whose enthusiasms are not tempered by knowledge or experience. One of the speakers urged that in view of the enormous increase in the price of building materials, with the consequent increase in the cost of building, steps should be taken by the Government to control the materials necessary, and to fix prices; and the York delegates went further and amended the resolution by adding that the Government should not only control but own materials, an amendment which was unanimously accepted. The conference also emphatically protested against the suggestion that the Government should assist private persons and limited liability companies with public money, to build houses to be let at rents based on the ordinary laws of supply and demand. It was further suggested that land should be made cheap by taxing and rating land values and unrating houses. A lady delegate asked Mr. Stephen Walsh, M.P., the Parliamentary Secretary of the Board of Trade, if he would ask the House of Commons to conscript all wealth over £100,000, and he replied that there would not be general agreement over the figure, which he thought was too high. It would be well if the Press of the country and Parliament were to show their contempt for such absurd utterances, which are based on ignorance, selfishness, and greed, for they cannot be too strongly denounced; the working classes would speedily find if they could secure the elimination of the classes they denounce, that they could not obtain prosperity until they had replaced them with others filling a similar position in the body politic. Certain sections in the community practically ask that robbery should be legalised and would put the ignorant in power to bring about such a consummation.

Workmen's Compensation (War Addition) Act, 1917.

THE Workmen's Compensation (War Addition) Act has received the Royal assent and will come into operation on the 1st September, and remain in force during the continuance of the war and for six months thereafter. It relates only to cases of total incapacity. Section 1 subsection 1 provides for the temporary increase of compensation in cases of total incapacity, giving an increase of one-quarter on weekly payments payable under the principal Act, whether the total incapacity has arisen before or after the commencement of the Act now passed, that is to say, after the 1st of September, and as long as this Act remains in force the weekly payments in respect of total incapacity will be increased by one-quarter; but from the wording of this subsection we gather that where an award is made after the Act has come into force it will be made as heretofore on the scale provided by the Act of 1906, but persons paying existing sums agreed or awarded, as well as persons liable under agreements or awards made after the 1st of September, will be liable to pay an addition of a quarter. The words of this subsection are: "Where any workman is at any time during the period for which this Act continues in force entitled during total incapacity to a weekly payment by way of compensation under the Workmen's Compensation Act, 1906, he shall, whether the incapacity arose before or after the commencement of this Act be entitled to receive from the person liable to pay the compensation, by way of addition to each such weekly payment payable in respect of any week within the said period, a sum equal to one fourth of the amount of that payment." Subsection 2 provides that "The additional weekly sum payable under this Act shall be deemed to be part of the weekly payment under the Workmen's Compensation Act, 1906 for the purposes of (*a*) The provisions relating to the recovery of weekly payments, (*b*) Any order made with respect to payment into court of a weekly payment, (*c*) The provisions of Par. 19 of the First Schedule to the Workmen's Compensation Act, 1906, which prohibits the assignment, &c., of weekly payments, and shall, notwithstanding that the liability to make the said weekly payment is redeemed subsequent to the commencement of this Act, continue to be payable in the same manner as if that liability had not been redeemed." Some doubts have been expressed as to what is the meaning of these words at the end of this subsection, but we think they clearly convey that this extra sum granted under this Act shall stand altogether outside the regular weekly payments and is not to be taken into consideration in the redemption of weekly payments but is to continue to be payable after the regular weekly payments have been redeemed. This accords with the interpretation we have placed upon subsection 1, and shows that the whole scheme of the Act is not to interfere with the operation of the permanent Act by the introduction of these extra payments of a temporary nature. The subsection, however, would have been clearer if, instead of the words "the said weekly payment," the legislature had said "the weekly payment under the Workmen's Compensation Act, 1906." Section 2 only refers to certified schemes giving the Registrar of Friendly Societies power to direct payment of an additional sum equivalent to that payable under this Act.

The R.I.B.A.

The following resolutions have been submitted to the Council of the R.I.B.A.:—

Resolution No. 1.—The Conference wishes to suggest to the Council of the R.I.B.A. that the time has come when matters of public architecture should be their main concern, especially at the evening meetings and in education. It is desirable that a constructive policy for bettering all our towns be considered, as well as national housing and such questions. In promoting a policy of public usefulness the Institute might best find the way to its own proper development and status.

Resolution No. 2.—That the Institute should represent to the Minister of Education the importance of insisting, in all the universities and schools under his charge, on education in the duties of citizenship in relation to the amenities of our towns and cities, and the value of manual instruction in mental development.

Resolution No. 3.—That the Council of the R.I.B.A. should consider the possibility of developing its organisation on lines tending to bring members of the Institute into closer touch with each other and with all technical associations and those engaged on a constructive public policy.

They represent the outcome of the recent conferences on architecture and education. They are good as far as they go, and chiefly amount to a suggestion that the meetings of the R.I.B.A. shall be of a nature to rouse more outside interest, and that fellowship among architects is desirable. The Institute might learn something from the London Society as to the first point, for it has in a brief term of existence shown that the educated public is interested in architectural matters, and that this interest can be utilised for great public ends. With regard to the second resolution, we are not quite sure that we understand what is meant by "education in the duties of citizenship." Does it mean general education in the nature of architecture, or of good manners, or both?

The Increment Duty of the Finance Act.

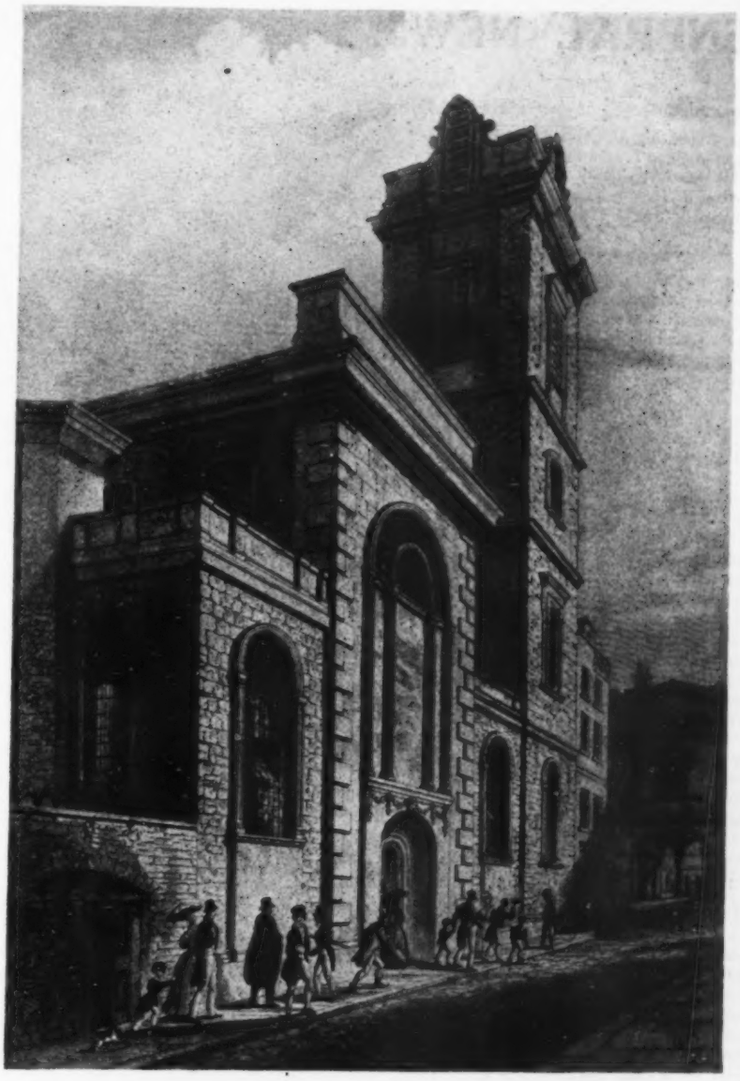
THE daily papers are full of reports of the activities of housing reformers who are urging the Government in and out of season to provide large grants of money for the provision of municipal housing schemes, while the various trade-unions and workmen's bodies think that they are doing a clever thing in protesting that no help should be afforded to private enterprise so that the shortage may be lessened. More than that, they pass by without notice the reasonable and unanimous claim that the provisions of the Finance Act, which have been instrumental in stopping building, and which have increased the burdens of the taxpayer, should be repealed. It cannot be too strongly stated that the working classes cannot in the end be benefited by the erection of dwellings to be let under an economic rent, for wages will be fixed at a lower rate than they would otherwise be if rents are artificially lowered. At the same time such a system will make it impossible for private owners to build for the working classes, and we should ultimately have to face increased taxation, if not financial bankruptcy, if the system were continued. Little as they may at present think it, the financial interests of the workers of the country are bound up with and dependent on national prosperity, and that prosperity is only to be secured by the wise and just policy of considering all interests and not alone those of a section.

THE LONDON CHURCHES OF WREN AND LATER ARCHITECTS OF THE RENAISSANCE.

No. LXVII.—The Demolished Church of St. Bartholomew by the Royal Exchange.

The first of Wren's churches to be demolished was that of St. Bartholomew by the Royal Exchange, which fronted on Bartholomew-lane and Threadneedle-street.

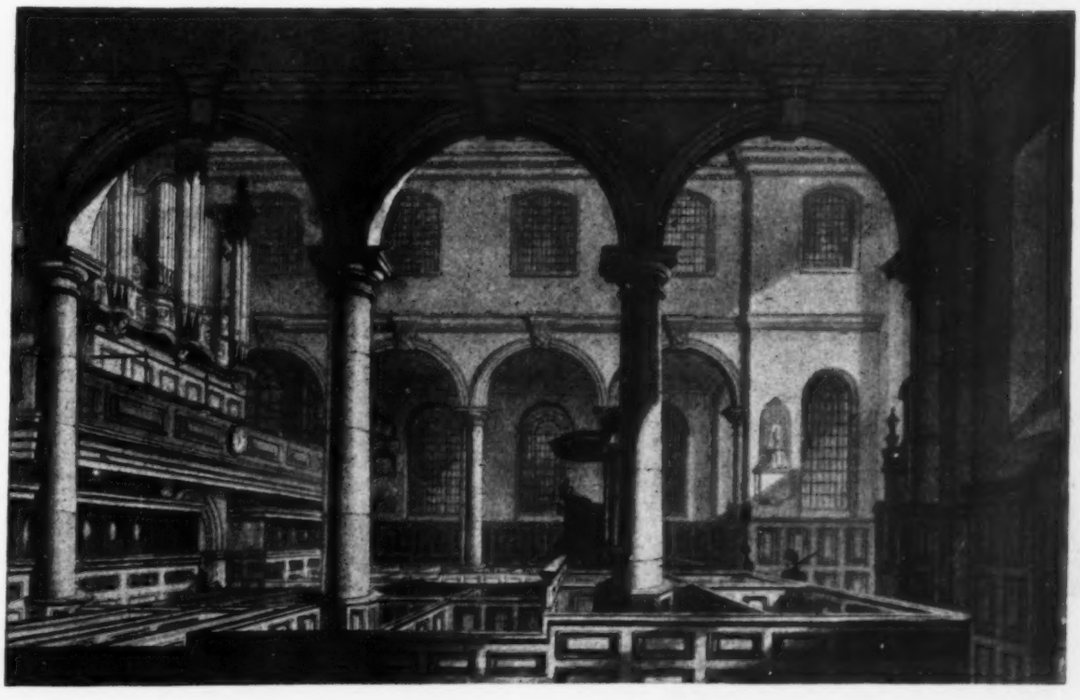
The rectory of St. Bartholomew came into the possession of Simon Godart and afterwards belonged to the Abbot and Convent of Our Lady of Grace, a Cistercian Abbey, near the Tower of London, but on the dissolution of the monasteries came into the possession of the Crown, the presentation being exercised by the Lord Chancellor. The church was rebuilt in 1438 by Thomas Pike, an Alderman, and Nicholas Yeo, a Sheriff of London. Sir William Capel, a Lord Mayor of London, added a chapel on the south side of the church. St. Bartholomew's was totally destroyed in the Great Fire, with the exception of the tower, and was rebuilt by Sir Christopher Wren in 1679, the Vestry obtaining a grant of £600 from the coal dues towards the cost, which amounted to £3,348 7s. 2d. The new church occupied a parallelogram of 72 ft. by 35 ft., the plan being divided into three parts by two arcades with Tuscan columns with a clerestory over on both sides. The ceiling was panelled and slightly segmental in form, and the church had a carved oak altar-piece. The tower had a singular termination suggestive of an unfinished window on each side, and the church in many ways, without being of great merit, must have formed an interesting example of contemporary Renaissance design.



St. Bartholomew by the Exchange: Exterior and Interior Views.

Memorial Windows, Hipswell Church, Yorks.

The unveiling took place at Hipswell Church recently of two stained-glass windows which have been inserted by the officers, non-commissioned officers and men of Catterick Camp, to the memory of soldiers who contracted disease on active service, died in the camp, and are buried in the churchyard. One of the windows represents St. George and the other St. Oswald, and at the base of each space has been provided for the insertion of names of the soldiers.



GENERAL NEWS.

Amalgamated Society of Carpenters and Joiners.

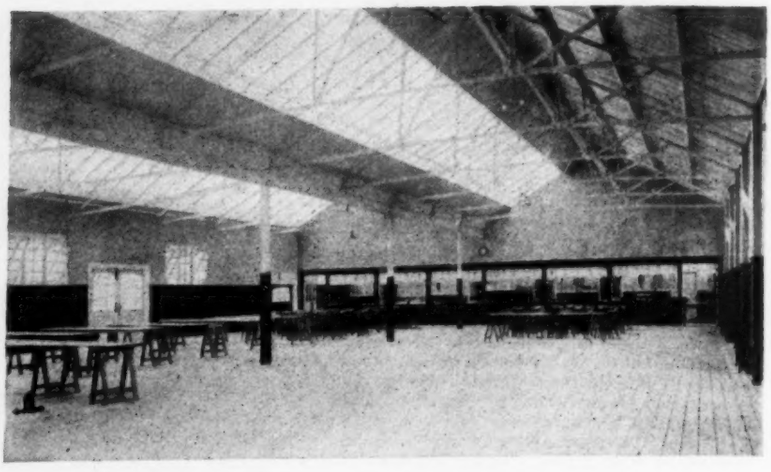
The following are the nominations for the election of general secretary of the Amalgamated Society of Carpenters and Joiners:—A. G. Cameron, R. Robertson, P. Smith, M. Harkness, H. Judge, P. H. R. Collins, and T. Wass.

Royal Scottish Academy.

The Royal Scottish Academy exhibition closed on Saturday last. The following works have recently been purchased:—"The Gean Tree" and "The Blue Bay," by Charles Mackie; "In East Lothian," by W. M. Frazer; "Soapy Suds," by R. Gemmell Hutchison; "Street in a Fifeshire Village," by Pollock S. Nisbet; "The Harbour, St. Andrews," by James T. Murray; "A Venetian Doorway," by Andrew T. Affleck; "The Tyne at Preston Meadow," by the late Robert Noble.

"Town Blight."

A useful suggestion is made in the leading article of the *Journal of the London Society*, under the heading of "Town Blight," from which we quote the following:—"A magnificent lead was given some years ago by the Mansion House Council of Health and Housing, which prepared a report dealing with the conditions of existing houses in London, and that is an aspect of the subject which, in the medley of town planning and new housing schemes, seems to have been missed. The recent medical inspection of children in Council schools has revealed the necessity for improved environment for the children. It ought to be no longer possible to find one street in which every house contains a case of tuberculosis. We have direct knowledge of such a street in Paddington. Unfortunately, we keep no record of the history of such houses, as is done in Paris; but if we did the revelation would possibly lead to some more radical measures than have so far been obtained. The whole standard of lighting, ventilation, and sanitation and damp-prevention in these houses should be raised, whatever the cost may be; and if that could be done, accommodation for the homeless would be found on a much cheaper basis by improving old properties than by laying out new estates. The experiment was tried in Kensington Borough with great success, the cost of the altered houses being exactly half that of new ones."



New Dining Hall at a Munition Works: Interior View.

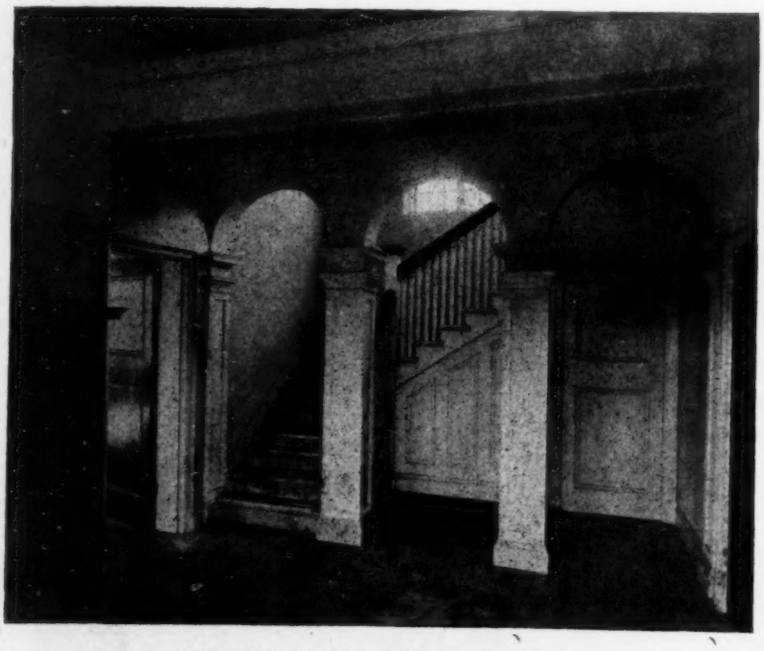
MR. GEORGE P. ALLEN, Architect. (See p. 140.)

Portsmouth Garden City Project.

The Health Committee of the Corporation has made such progress in its preliminary inquiries that the Council at its meeting in September will be asked to affirm the principle of a Garden City and authorise the preparation of the necessary plans. Public opinion is, we believe, wholly in favour of the development of the borough upon these lines. No one is unmindful of the valuable work done by the speculative builders, and it is to their enterprise that Portsmouth can boast of a larger proportion of separately owned houses than any other great town in the kingdom, but the time has come when something better is required than a continuation of the present system of building rows of houses all alike and upon the smallest possible spaces. The deadly monotony of scores of mean streets must have a soul-deadening influence upon the people, and it is for the Corporation to remedy this by providing broader areas, wider roads, pleasant gardens, and the other amenities of progressive civilisation. In doing this, it by no means follows that there will be any interference with private enterprise; indeed, rightly directed, the formation of a Garden City would afford the speculative builders opportunities hitherto undreamed of.—*Portsmouth Evening News.*

The Late Howard Chatfeild Clarke.

The last number of the *R.I.B.A. Journal* contains a very graceful appreciation of the late Howard Chatfeild Clarke, written by Mr. John Simpson, from which we quote the following passage: "Such men as Chatfeild Clarke—the 'architect and surveyor'—are the blood and marrow of the Institute. The designation covers, at a guess, five-sixths of its members; for those who are able to restrict their practice to purely architectural work are but few; and they moreover are, or should be, surveyors, in respect of its execution. The Surveyors' Institution took Chatfeild Clarke to their bosom, and made him their President. Their gain was our loss. He never, so far as I know, allowed himself to be nominated for a seat at our Council-table; yet, of the men now sitting there, not a half-dozen, perhaps, are more widely known than was Chatfeild Clarke. I had hoped that, his term as President of the Surveyors ended, he might have come forward. The counsel of such men as he would be invaluable to our polity, and their presence would supply a very needful contact-point with administrative authorities, who regard with invincible, if unjustified, mistrust the aspirations of those who profess and call themselves 'artists.' Discussing the subject one day with Chatfeild Clarke, I asked him why leading 'city architects' stood aloof or, at least, indifferent; and he was disposed to find the cause in lack of continuity—the constant and apparently capricious changes in the Council under the system of yearly elections, which disincline many useful men to accept so uncertain a tenure. Be this as it may, their absence is to be regretted; the wide diversity of functions exercised by its members might be more accurately reflected in the governing body. Our wise forefathers, when they defined the purpose of the Institute they founded, wrote, firstly, *usui civium*, leaving *decori urbium* to the second place; and rightly so, for the importance of the former is incomparably the greater to the commonwealth."



"Newark," Weybridge: Hall and Staircase.

MR. A. C. MORRIS EDWARDS, F.R.I.B.A., Architect. (See p. 140.)

Perth Water Supply.

It was hoped to augment Perth water supply by a system of artesian wells, but an experiment in the latter direction has unfortunately not proved successful. A bore was sunk to a depth of about 400 ft., but was without result, though at expense of £1,100.—*Glasgow Herald.*

Glass design by Mr. Ernest Heaseman, and made by Mr. Herbert Bryans at the Wisley Laboratories.

Leading Contents.

	PAGE
ECONOMIES IN BUILDING	135
NOTES	136
THE LONDON CHURCHES OF WREN AND THE LATER ARCHITECTS OF THE RENAISSANCE	137
GENERAL NEWS	138
CORRESPONDENCE	140
BOOKS	140
THE CITY COMPANIES AND THEIR HALLS: THE BUTCHERS CO.	141
THE BUILDING TRADE	143
COMPETITIONS, CONTRACTS, &C.	145
PROPOSED NEW BUILDINGS AND OTHER WORKS	146
PRICES CURRENT OF MATERIALS	147
TENDERS	148

ILLUSTRATIONS.

Newark, St. George's Hill, Weybridge.

THIS house was built during 1912 on the St. George's Hill Estate, Weybridge. The walls are built with sand-faced bricks of a broken red colour, and the roofs are covered with a dark stained sand-faced tile. The contractor was Mr. W. G. Tarrant, of Byfleet. The grates were supplied by Messrs. Brat, Colbran & Co., of London, and the sanitary fittings by Messrs. Aldous & Campbell, Ltd., of London. Mr. A. C. Morris Edwards, F.R.I.B.A., was the architect.

Palazzo Lercari, Italy.

THIS illustration shows an interesting example of the Italian Renaissance in which effective use is made of arcaded features.

Additions to No. 2, Bishopsgate.

WE give a very pleasing example of the work of the late Gerald C. Horsley, which forms a private room for Lord Revelstoke.

Old Butchers' Hall in 1855.

AN article on the Butchers' Company is given on page 141.

New Dining Hall at a Munition Works.

This building, illustrated, has been erected for the women workers at a munition works. The photographs show the interior of the dining hall and also the building looking towards the kitchen and service counters.

The building has been constructed of brickwork with steel roof principles, boarding and slates. The interior is all painted white with a khaki-coloured dado 5 ft. high all round. The kitchen has been fitted up with the Richmond Gas Company's up-to-date fittings for supplying meals to 500 girls. Large sculleries are provided and fitted up with all the latest improvements of washing machines and including larder, china and dry stores. The building is heated by radiators and lit with electric light and ventilated by Rowell's patent ventilators.

The building has been designed by the architect, Mr. George P. Allen, who has superintended the whole of the detail arrangements of the kitchens, and everything has been carried out under his personal supervision. Mr. Samuel Foster, was the contractor, and the steel work was erected by Messrs. Blakeley, of Birkenhead.

We also give some interesting examples of simple French monuments on page 145, and some modern stained glass designs on page 139.

MEETING.

MONDAY, SEPTEMBER 10.

Incorporated Clerks of Works Association (at Carpenters' Hall, London Wall, E.C.)—6.45 p.m.

CORRESPONDENCE.

The Housing Scheme.

SIR,—I am loath to trespass on your valuable space for the exposition of my views about building, but the comments made in your current issue can hardly be passed by unchallenged. It is, I suppose, the fate of most architects nowadays to suffer from the same kind of misconception which afflicted the painter Mr. Arnold Bennett writes about, who, because he painted a picture of a policeman, was inevitably supposed to go on painting policemen and nothing else, and even to hold that no one should ever paint anything else but policemen. If, by the accident of Fate, an architect is commissioned to design a country house, he is at once branded as a "domestic architect," a term which suggests a creature tamed to the uses of man as distinguished from his brethren of the wild. Or let him design a church and he becomes that fearsome compound known as an "ecclesiastical architect," with all that it implies.

Personally, I protest against being told that I belong to a particular school of architects. Nor am I specially concerned with any aesthetic views about architecture, and I plead not guilty to an inclination to "reproduce the old English village."

Incidentally symmetry is not anathema to me. The kind of building I stand for is sound, honest work done in a simple natural way. The only things in the old English village I wish to see reproduced are just those qualities which I find there, but do not find in most modern building. As for symmetry, regularity, irregularity, uniformity, picturesqueness, &c., all these things trouble me not at all. If the natural conditions of the particular problem lead to symmetrical treatment as their proper expression, let us be symmetrical by all means, or if they lead us to irregularity and picturesqueness, these qualities will be justified. Let a building design itself and let groups of buildings arrange themselves in obedience to natural conditions and all will be well..

We go wrong when we struggle against conditions to produce effects of uniformity or irregularity according to the particular "school" to which we belong. My own concern has mainly been with building in English country, which, with its old cottages and farmhouses, is still so full of natural beauty which I fear will be disfigured by new cottages unless the production of these is controlled by those with some knowledge of this particular subject. What is done in the towns does not matter so much, because no one can possibly disfigure a modern town. It happens that in most English country the local conditions demand irregularity of treatment. The varied slopes of the ground, conditions as to aspect and prospect, the presence of groups of trees—all these things suggest irregularity in preference to the paper academic scheme which takes no account of local accidents, and since the builders of the old cottages succeeded so well in adding beauty to the country instead of disfiguring it by building as we now do, it is obviously wise to study their methods. All that have eyes to see must agree that while the normal modern building in the country is a blot on the landscape, the normal old building is an added beauty. Even our house agents speak of unspoiled country districts, meaning that there are no modern buildings in sight. Do our architects and builders then desire to go on disfiguring everything they touch until this disease of modern building has spread like a hideous rash, destroying all that beauty of the world our forefathers made? Can they not learn from the beautiful examples all around them a better way of building? As to the particular school of architect "concerned with the scientific cutting up and arrangement of sites," I was not aware of the existence of a body engaged in this particular kind of butchery. In the preparation of any combined group of houses or cottages, if we are not intent on putting the cart *before* the horse, the first consideration should be the units of which such schemes are composed. Having arrived at such units in accordance with requirements, we can then proceed to combine and arrange them as required. Get your individual right and it is not a difficult matter to combine and arrange individuals into satisfactory communities, but to start with some preconceived idea of a community and work backwards to a resultant individual, seems to me an unthinkable proposition.

M. H. BAILLIE SCOTT.

BOOKS.

Concrete, Plain and Reinforced. By FREDK. W. TAYLOR, M.E., and SANDFORD E. THOMPSON, S.B. (London: Chapman & Hall, Ltd.) Price 23s. net.

THIS treatise has been written for the practising engineer and contractor, and also as a text book for students, and it contains a mass of information on the subject of concrete which occupies nearly nine hundred pages. The first edition was published some years ago, and the present edition, which is the third, has been thoroughly revised and brought up to date, owing to the great developments that have recently taken place in the use of the material. Some of the chapters have been contributed by writers other than the authors of the book, these including the Chemistry of Hydraulic Cements, by Spencer B. Newberry; Proportioning Concrete, by William B. Fuller; Effect of Sea Water upon Concrete and Mortar, by R. Feret; and Arches, by Frank P. McKibben. The first section of the volume is devoted to the manufacture of concrete, with chapters on the materials employed and the methods to be adopted, and this is followed by some excellent chapters on the theory and design of reinforced concrete. The remaining text deals with the application of the material in building work together with theoretical and practical examples of various constructional features. The authors have spared no effort in order to render the treatise a complete one, and it can be thoroughly recommended as an excellent addition to concrete literature.

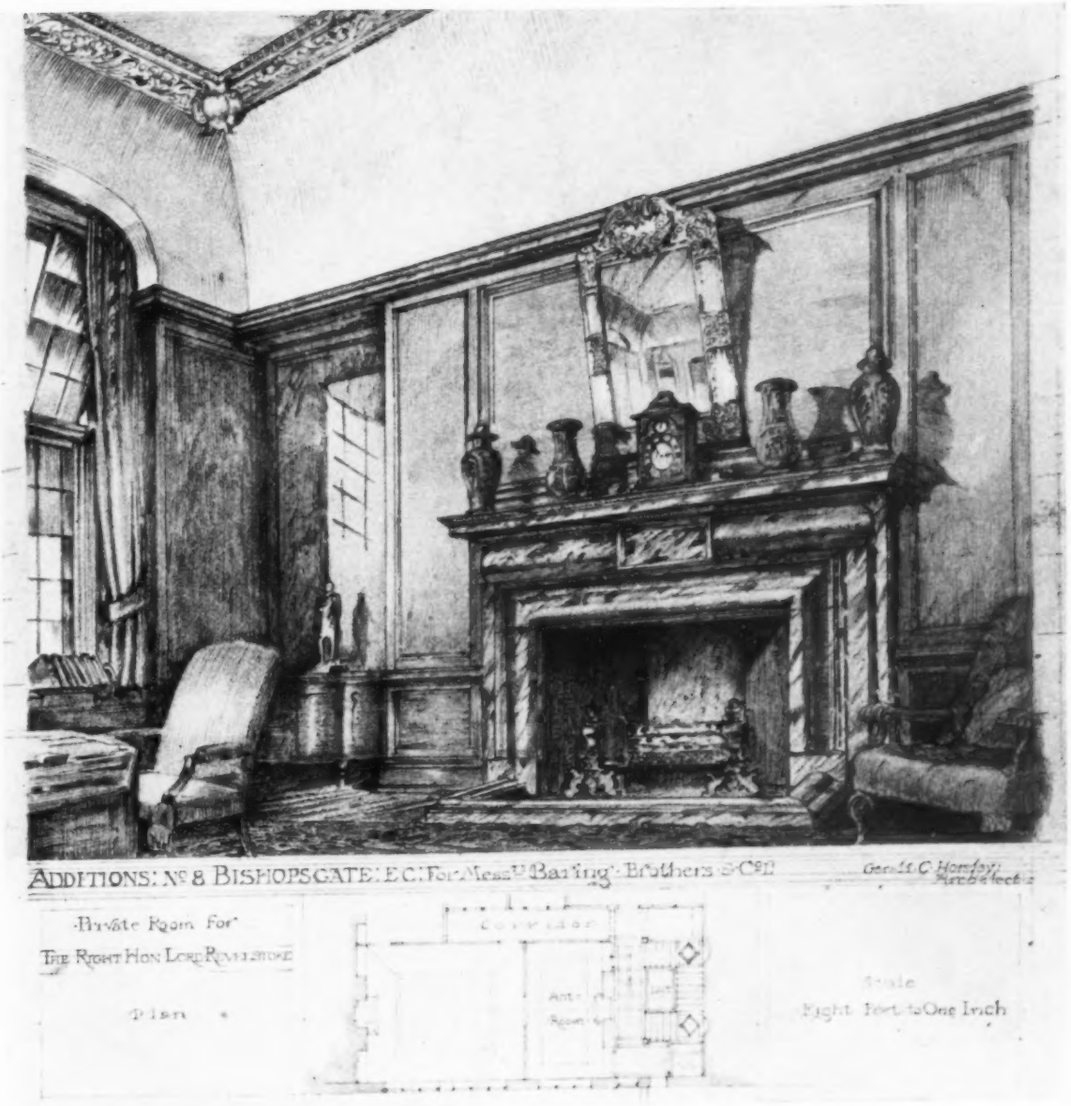
The Manufacture of Earthenware. By ERNEST ALBERT SANDEMAN. (London: Crosby, Lockwood & Son.) Price 7s. 6d.

THIS volume was written sixteen years ago, and there is practically no substantial difference in the contents as now published.

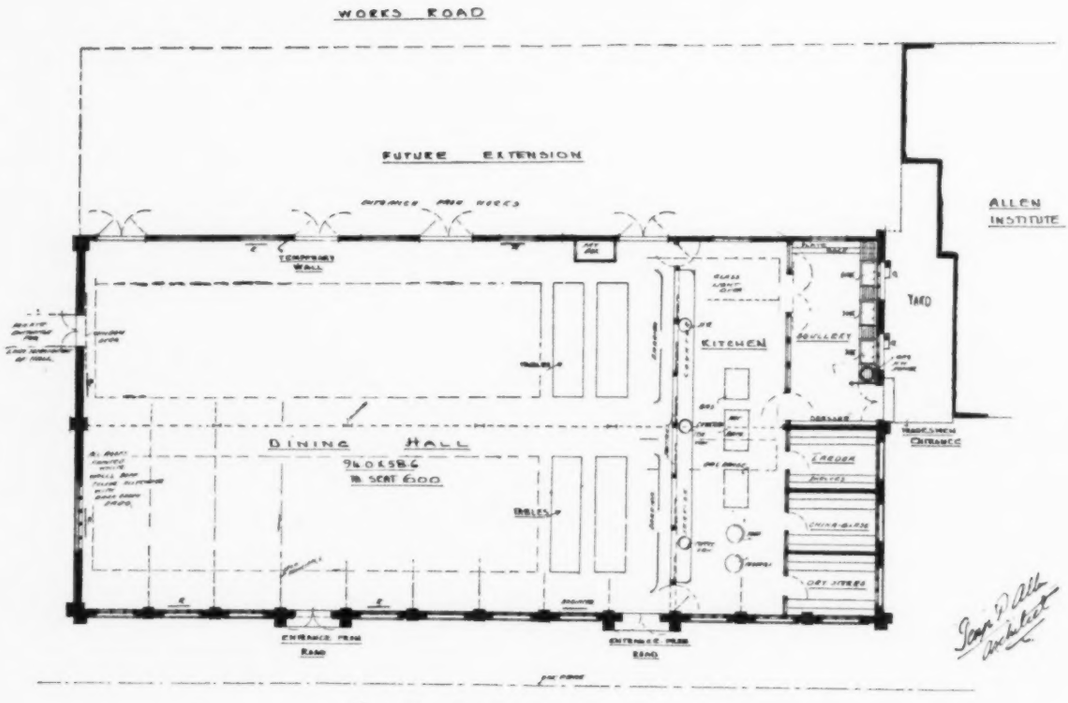
The manufacture is fully described for all the various types of earthenware, with notes and illustrations of the machinery employed, and the book should be interesting and instructive to those connected with the industry, while to the architect and engineer it will be useful as a work of reference. There has been considerable development in the use of earthenware during the war for acid-resisting purposes, and it is in connection with this branch of the industry that interest has been awakened.

The R.I.B.A. Examinations.

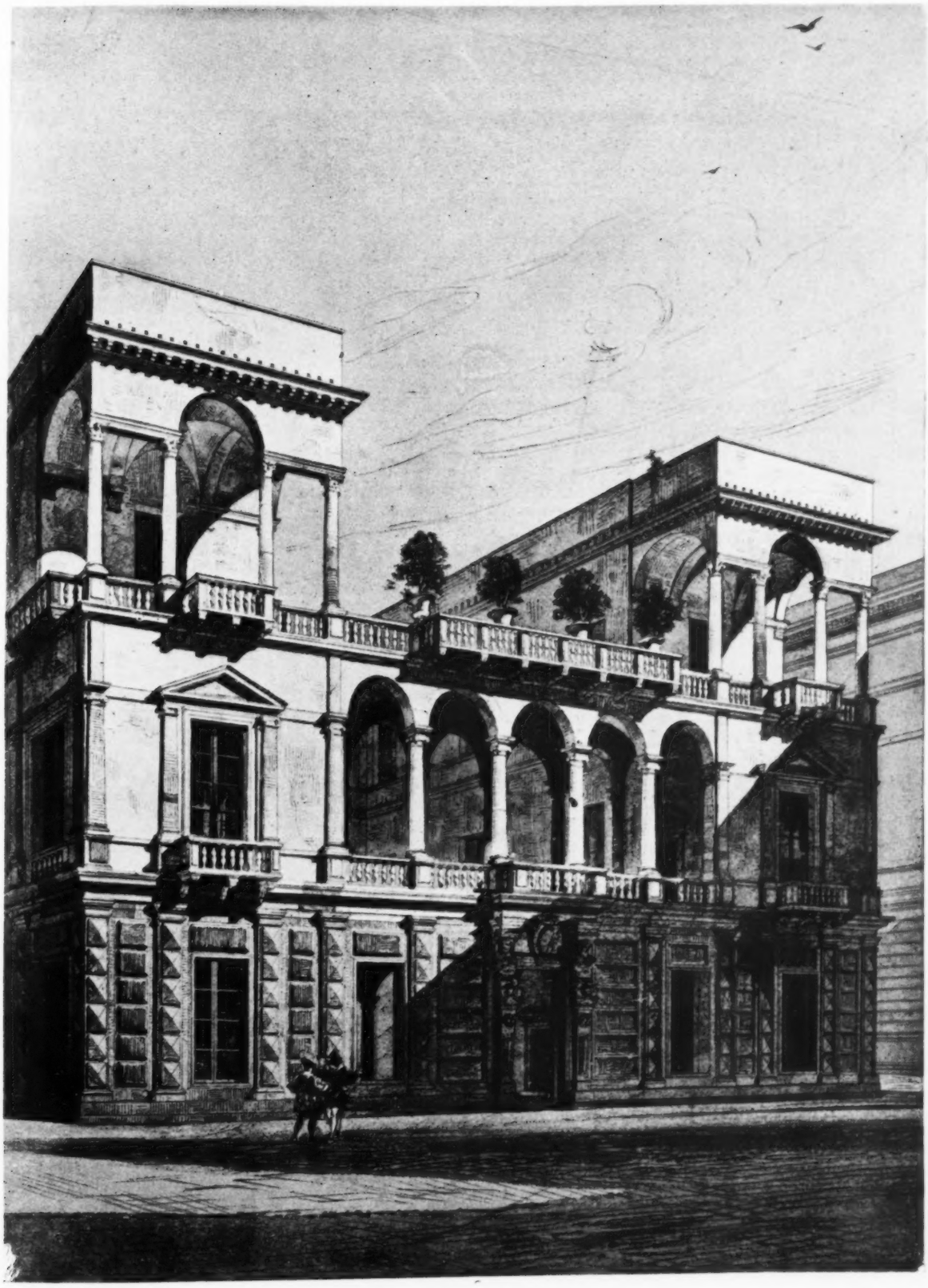
We take the following particulars from the August number of the *R.I.B.A. Journal*:—The Intermediate Examination: The Intermediate Examination, qualifying for registration as Student R.I.B.A., was held in London from June 1–8. Of the six candidates examined, three passed and three were relegated. The passed candidates, who have been registered as Students, are as follows, the names being given in order of merit:—E. L. Gunston, Reading; A. Waddicar, Bolton; R. J. B. Clark, Penzance. The Final and Special Examinations: The Final and Special Examinations were held in London from June 21–29. Of the 13 candidates admitted, 4 passed, and the remaining 9 were relegated. The successful candidates are as follows:—H. A. Beeston (Special), Cairo; E. C. Henriques, London; T. Rayson, London; G. P. Stainsby, Durham.



ADDITIONS TO NO. 8, BISHOPSGATE, E.C.
THE LATE GERALD C. HORSLEY, ARCHITECT.



NEW DINING HALL AT A MUNITIONS WORKS: PLAN AND VIEW.
MR. GEORGE P. ALLEN, ARCHITECT.



PALAZZO LERCARI, ITALY.
From "Die Palast Architektur von Ober Italien und Toscana."

OLD BUTCHERS' HALL IN 1855.

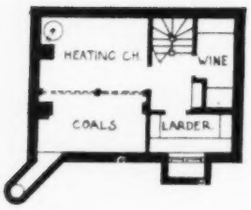
From a drawing by T. HOSMER SHEPHERD *in the Crace Collection.*

GARDEN FRONT.

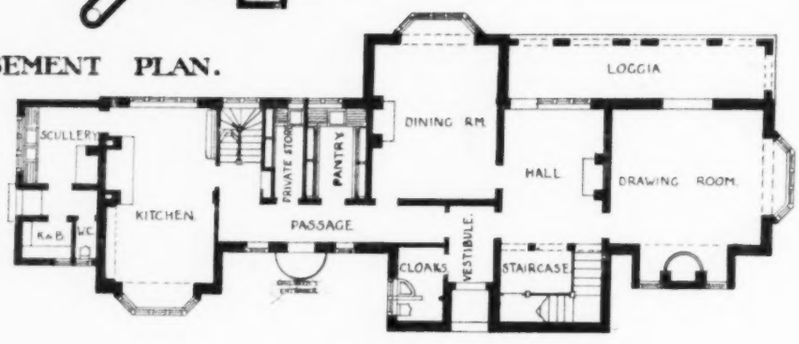
ENTRANCE FROM RIGHT.

"NEWARK," WEYBRIDGE.

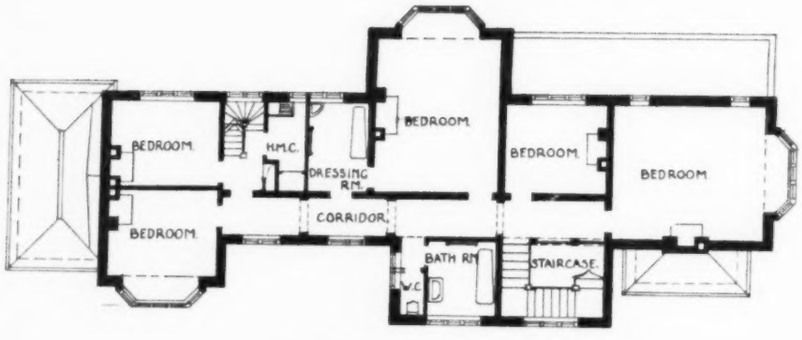
MR. A. C. MORRIS EDWARDS, F.R.I.B.A., ARCHITECT.



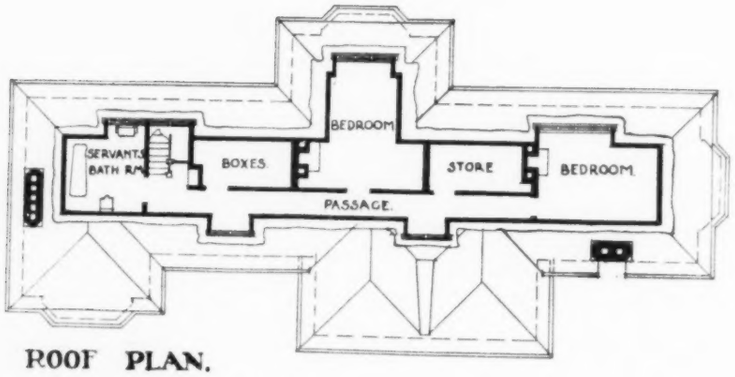
BASEMENT PLAN.



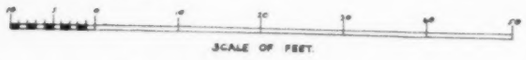
GROUND FLOOR PLAN.



FIRST FLOOR PLAN.



ROOF PLAN.



"NEWARK," WEYBRIDGE.

MR. A. C. MORRIS EDWARDS, F.R.I.B.A., ARCHITECT.

. . The . .

City Companies and Their Halls.*

THE BUTCHERS

No. 24.

The Butchers' Company.

THE Butchers' Guild was among the most ancient of mediæval associations and was one of the eighteen adulterine guilds required to pay fines or licences in 1180. Their master, in common with others of the older guilds, was called the "Alderman." In 1266 an Act of Parliament was passed to prevent and punish the exposure or sale of tainted, putrid or diseased meat, and in 1319 butchers convicted of selling such meat stood in the pillory while the condemned carcases were burned beneath them, but those who preferred false charges were punished in like manner. There were formerly three markets—that of "Stokkes," near the Mansion House, one in Eastcheap and another at St. Nicholas Shambles, now known as Newgate-street; while in 1277 the Mayor and Aldermen enacted that no market should be held on London Bridge or in any other unauthorised locality. The East Cheap men had set up stalls on London Bridge to intercept supplies and obtain the custom of Southwark. The butchers of "Stokkes" in 1331 successfully opposed sales by retail by "foreigners," and obtained the consent of the trade to the suspension of any who had been bankrupt once or twice until they had paid their debts in full and the renewal of the regulations obliging all butchers to dwell within the City instead of dwelling at Stratford, to the neglect of their duties as citizens and craftsmen.

In 1345, it was enacted that butchers should sell their meat within the enclosure of "Stokkes" (*i.e.*, the Stocks-Market which occupied the site of the present Mansion House and was so called from the vicinity of *the public stocks*), and not in the highways. Fishmongers were to adhere to the same regulations on "fish days," the penalty in each case to be forfeiture.

In 1369 a Royal Order was issued calling on the Corporation to prohibit the slaughtering of animals at St. Nicholas Shambles, near Baynard's Castle, from whence offal was carried to a jetty known as Butchers' Bridge, and there thrown into the river, causing a nuisance. Stow states that the vicinity of St. Michael's, Crooked-lane, was an ill-favoured spot in consequence of the butchers' stalls there. In 1371 the slaughtering of all large animals was ordered to take place at Stratford or Knightsbridge, and in 1372 measures were first taken to prevent the pollution of the Thames, though little or nothing was actually done, and an Act was passed in 4th Henry VII forbidding slaughtering in the City, which still prevailed as late as the reign of Elizabeth.

Butchers' Row faced St. Clement's in the Strand, close to Clare Market, and may have been an offshoot of St. Nicholas Shambles, as it lay within one mile of the City, as specified by the Company's charter, and it may have been an offshoot of St. Nicholas Shambles as Leadenhall was of East Cheap, and, like it, subject to the Butchers' Ordinances.

Leaden Hall was given to the Corporation by Sir Richard Whittington in 1409 the City exercising a certain jurisdiction over the property, and at a later date the butchers did business there.

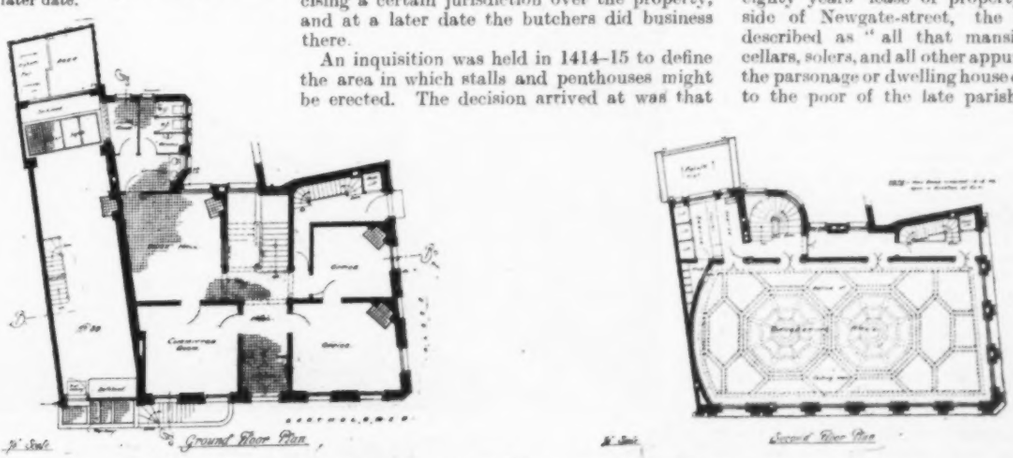
An inquisition was held in 1414–15 to define the area in which stalls and penthouses might be erected. The decision arrived at was that by custom they were entitled to stand and sell on both sides of East Cheap between certain defined points. Refuse seems to have been taken from East Cheap down Pudding-lane, from "Stokkes" down Wallbrook, and from St. Nicholas Shambles by the Fleet to the river. The Eastcheap market was the earliest abandoned: "Stokkes" followed in 1737, being transferred to the vicinity of the Fleet, while St. Nicholas Shambles was transformed into Newgate Market, and survived till 1869.

Although the guild is one of the most ancient in the City, they did not obtain a charter until 1605, which gave them the customary jurisdiction and rights over the trade in the city within a radius of one mile. The charter was confirmed in 1637 and increased jurisdiction given, and was further renewed in 1685 and 1749. Their powers over the trade were reduced and finally abrogated by successive Acts in 1824, 1855, and 1863. The statute repealed in 1824 was known as the Flaying Act and had given the Butchers, Cordwainers, and Curriers joint powers to prevent the unskilful removal of hides.

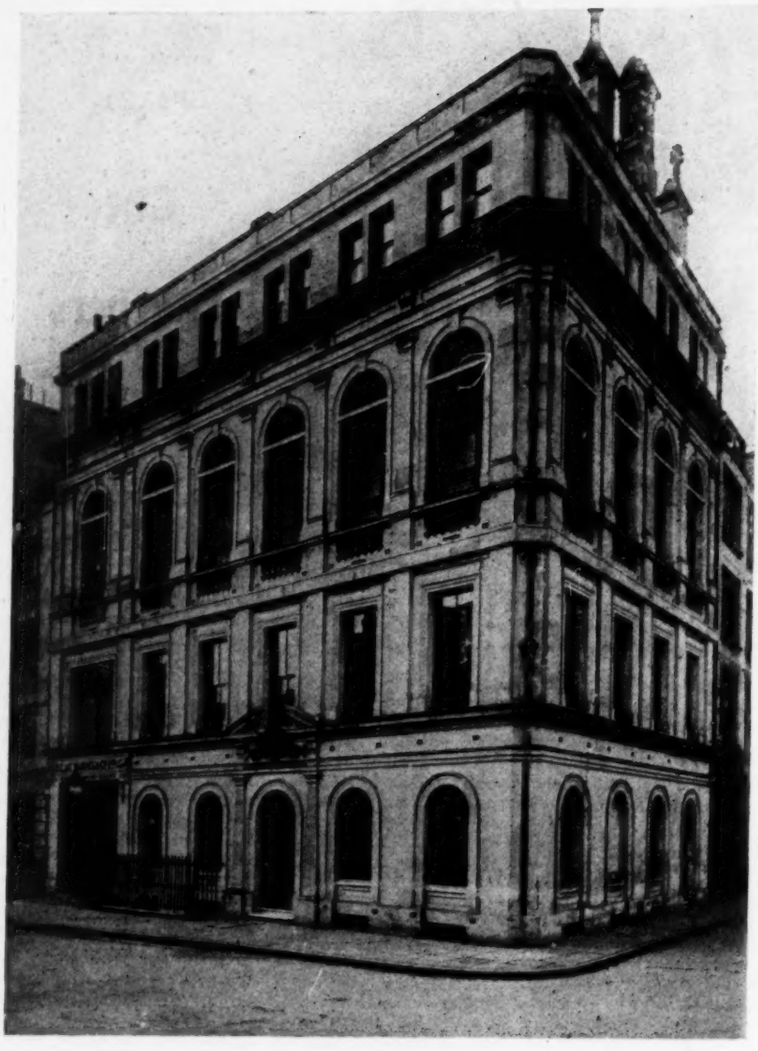
Daniel Ffoe or Defoe, the author of "Robinson Crusoe," was admitted a member of the Company by virtue of his father's freedom, in 1687. He further wished to be discharged from all offices, which was also granted, he paying a fine of £10 15s. for that purpose.

The record of the various habitations of the Company is an unfortunate one, since little remains in the way of buildings or records of buildings, to illustrate their connection with the historic past. Prior to the Reformation the Butchers held their meetings in a house in Scalding-lane, and in 1548, during the mayoralty of Sir Thomas Gresham, they secured an eighty years' lease of property on the north side of Newgate-street, the premises being described as "all that mansion house with cellars, solers, and all other appurtenances, called the parsonage or dwelling house of late belonging to the poor of the late parish church of St.

* The following articles on the City Companies have already appeared in our pages:—the Mercers', March 31, 1916; the Grocers', April 28; the Drapers', May 12; the Goldsmiths', June 9; the Skinners', July 14; the Merchant Taylors', August 4; the Haberdashers', September 1; the Salters', October 6; the Ironmongers', October 27; the Vintners', December 8; the Clothworkers', December 22; the Barbers', January 26, 1917; the Dyers', Feb. 16; the Brewers', February 23; the Leathersellers', March 30; the Pewterers', April 20; the Cutlers', June 1; the Bakers', June 15; the Wax Chandlers', June 29; the Tallow Chandlers', August 10; the Armourers', Brasiers' and Girdlers' will be given next, and the Fishmongers' at a later date.



Butchers' Hall: Ground Floor and Hall Plans.



Butchers' Hall: Exterior View.

Nicholas in the Flesh Shambles, being near to the late dissolved house sometimes called the Grey Friars, now called Christ Church within Newgate." The house was let for £6 a year, the lessees being at liberty to restore or alter. It was a quadrangle surrounding a courtyard or garden, and remained very much as it was formerly when Agass published his map about 1560. The lease was extended and the Butchers remained there until its destruction by the Great Fire, after which the Company were reduced to such straits that they surrendered their tenure.

The Butchers subsequently erected a second hall on their own property in Pudding-lane, Eastcheap, which is referred to by Maitland as being very neat and convenient, containing an upper and lower hall; a parlour and three handsome rooms, adorned with fretwork and wainscot.

This hall was burnt down in 1829 and a third hall erected on the same site, which was required for purposes connected with the Metropolitan and District Railway Companies in 1882, after which the then Master and four members of the Court acquired the sites of 87 and 88, Bartholomew-close, which they subsequently transferred to the Company without any profit to themselves. A further acquisition of 10, Duke-street (now 44, Little Britain), put the Company in possession of the site on which their fourth hall was built, in 1884, from designs of Alexander Peebles. Butchers' Hall is a simple utilitarian building, possessing no very marked characteristics, and is conveniently arranged for the business of the Company, but regret must be felt for the destruction of the past halls, which possessed greater architectural interest and historic associations.

The arms of the Company were granted in 1590–4 and are thus described:—

Arms.—Azure two slaughter axes in saltire argent handled or, the blades inwards, between two bulls' heads couped argent, armed or; on a chief argent a boar's head couped gules, tusked or, between two block brushes vert.

Crest.—A flying bull argent, wings indorsed or, and argent, armed, crined and unguled or, over the head a small circle or glory proper.

Supporters.—Two flying bulls argent, winged, armed and unguled or, over each head a small circle or glory proper.

Motto.—Omnia subjecisti sub pedibus, oves et boves.

There is another (earlier?) coat—viz., Azure two slaughtering axes in saltire or between four roses argent seeded or. ("Welch's Coat Armour of the London Livery Companies," from which the arms are reproduced.)

The Company administers a Poor Fund arising out of the will of James Leverett, in which he left a copyhold estate at Lambeth to the Company, the rents to be devoted to the relief of poor freemen and widows of freemen of the Company. This provides the means of giving annuities of £15 to several pensioners, the number being nine. The property was enfranchised in 1870; together with an addition made by the Company, it was subsequently sold, the proceeds being in the hands of the Charity Commissioners.

A fund was also left by Miss Bayley to the Master, Wardens and Court in 1840, under which some twenty-two pensioners, poor freemen and widows of freemen receive £20 each and upwards annually.

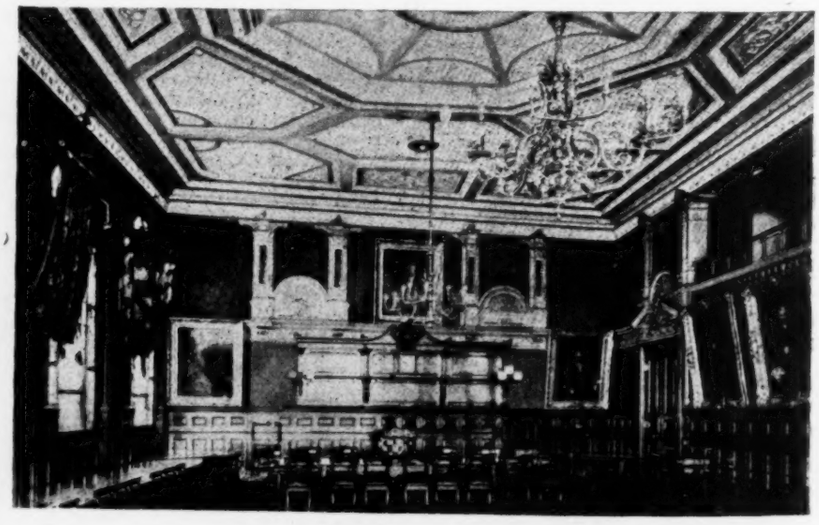
Mr. W. J. Bonser, Master in 1888, gave stock to the Company to provide an annual income of £15, to be paid under the name of the Bonser Pension to the relief of a decayed liveryman or the widow or unmarried daughter of a liveryman.

Mr. Alfred Lyon, a Past Master, conveyed to the Company a freehold property at High Cross, Tottenham, the net income from which was to be devoted to provide, amongst other objects, a pension of £26 and not more than £30 annually, and to be paid under the name of the "Alfred Lyon Pension" to the widow or daughter of a freeman of the Company who should have carried on the trade of a butcher.

Mr. Benjamin Bloomfield Baker, a Past Master of the Company, gave stock to the Company to provide an annual income of £15 to be paid under the name of the "Baker Pension" to a decayed liveryman or the widow or unmarried daughter of a liveryman of the Company.

The Misses Emily and Ann Game (daughters of the late Charles Valentine Game, Esq., a Past Master of the Company) gave stock to the Company to provide a fund to be called the "Charles Valentine Game Fund" (in memory of their late father), to pay £15 a year to a freeman or the widow or spinster daughter of a freeman of the Company in distressed circumstances.

Mr. Peter Meech, a Past Master of the Company, gave to the Company a freehold farm at Beaminster, Dorset.



Butchers' Hall: The Livery Hall.

THE BUILDING TRADE.

EXPANSION OF MATERIALS.

IT is well known that trouble arises if precautions are not taken in plumbing work to allow for the effects of expansion, and we propose in this article to explain the reason for and means of ascertaining the amount of this expansion caused by heat, or alteration in form. Heat, like electricity or light, is a form of energy, *i.e.*, one of the ways in which the force of nature is manifested. All materials, even dense solids like lead, really consist of very minute separate particles, so minute that no microscope can reveal the none the less true fact that there are spaces between them. These particles, called "molecules" by the scientist, are always moving, and when a body is heated, the effect is to make them move more, and this increased motion or vibration makes the spaces between them bigger, so that, viewed as a whole, the material gets larger, or expands. This expansion, in the case of metals, goes on increasing as the heat increases; it is proportional to the rise of temperature. Temperature is not heat; it is "heat level," and is measured usually by the expansion of quicksilver in a glass tube with marks on it or its wooden frame, in the common instrument called a thermometer. Of course the actual amount of heat energy, as noted, say, by the cubic feet of gas required for heating anything, depends not only on the temperature produced but on the quantity of material to be heated. Temperature is measured in degrees on a scale agreed upon, just as an inch scale is recognized. The scale popularly used here is the Fahrenheit scale, on which the freezing point of water is 32 and the boiling point 212, and each of the 180 divisions between is called a "degree," represented as "1° F." Now it is found by trial that different things expand to different extents though heated to the same temperature. Thus, if hot water be run through both an iron and a lead pipe of the same length the lead will increase in length by expansion more than the iron. Copper and zinc also expand more than iron, but materials such as brick and concrete much less. It is useful, therefore, to know how materials behave in this respect, and tables have been prepared as the result of experiments showing how much longer equal lengths of different things get when equally heated. The increase in the original length when a fixed length of a thing is heated 1° F. (from 32° F. to 33° F.) is called by scientists the "coefficient of linear expansion" of that material. Thus tables will give such coefficient for iron as $\frac{3}{5000}$* which means that, say, one foot length of iron heated 1° F. will then measure $1\frac{3}{5000}$ feet, or one yard of iron similarly heated will become $1\frac{3}{5000}$ yards. This increase is so small that at first sight it might appear unimportant, but as each increase of temperature of 1° F. produces such expansion, and as no barriers which construction can impose can prevent this occurring, if no precautions are taken it is soon sufficient, in a long run of pipe, to cause strained and leaking joints. With the coefficient of expansion we can calculate in advance how much longer any pipe will become when heated. Thus, if it be required to find the expansion of, say, a 50-foot run of pipe when heated from 60° F., ordinary air temperature, to average radiator temperature, say 180° F., we reason as follows:—1 ft. heated 1° F. becomes $1 + \frac{3}{5000}$ ft., so 50 ft. would become $50 + 50 \times \frac{3}{5000}$, or $50 + \frac{3}{100}$, but since the pipe is heated 120° F. (from 60° F. to 180° F.) it will become $50 + \frac{3}{100} \times 120 = 50 + \frac{36}{100}$ ft., or, converting $\frac{36}{100}$ ft. into inches, $\frac{36}{100} \times 12 = \frac{432}{1000}$, which is an expansion of very nearly half an inch. Now lead expands nearly 2½ times as much as iron, and zinc more than twice as much, so that the importance of allowing these metals freedom of motion, even when they are not heated so much, but merely used on flats exposed to the sun, will be readily apparent. This is why lead and zinc are laid with such frequent drips and rolls, and always left free to move along length and breadth. Brass and copper expand roughly 1½ times as much as iron, while the plumber can usually neglect the expansion of things like brick and stone, partly because this is small, but also because, being bad conductors, they seldom become rapidly heated right through, like metals, when changes of temperature occur.

When lead is fixed on a steep slope it is not uncommon after some years to find it "crawling," unless it has been very carefully laid. This is partly due to expansion and partly due to its great weight. The sheets are, of course, fixed at the top, and thus, when expanded in the sun, their increase in length takes place at the free bottom end. At night contraction involves shrinkage in length, and thus a pulling up of the sheet from the bottom, and this, owing to the weight of the lead, puts a strain on the fastening at the top, from which the lead may be eventually torn away; hence the necessity for the modern practice of putting an ample number of lead dots to form local points of support. It would be interesting to deal with the various forms of provision made to allow for expansion, but this would be beyond the scope of these articles, which seek to raise an interest in the explanation of trade details rather than to describe them. The plumber usually seeks to avoid the necessity for expansion joints by giving his pipes a free bend at right angles at the end of a long run, which allows a slight movement, but when this is impossible a length of pipe bent to almost form a circle is inserted at suitable intervals, having sufficient flexibility to bend, as the ends of the main pipe approach or recede from one another. Such inserted pipe is preferably of copper, which, being a better conductor than iron, more readily responds to changes of temperature.

* The tables will probably show this as a decimal, .0000065.

Butchers' Hall; The Defoe Memorial Window now destroyed.

Expansion of Water.

The above discussion has been confined to considering the expansion of a material in one direction, but, of course, this increase takes place not only in length but in breadth and height, and such increase is proportional, as we have seen, to the dimension concerned; hence, in a pipe, the actual swelling of the pipe, that is, its increase in diameter, is usually a thing which may be neglected. Its existence, however, shows that hot-water pipes should never be solidly encased in materials like concrete, but be left free to move in all directions. Now water and other liquids, being devoid of rigidity, will expand entirely on their free surfaces, so that any rise in the level of water due to heating will represent the expansion in length, breadth, and height, or what is called the cubic or volume expansion. Water does not expand so regularly as the metals; in fact, just above the freezing point it actually contracts a little when first heated, then, however, it goes on expanding considerably until just before it boils it occupies about $\frac{1}{23}$ more space *e.g.*, a gallon of very cold water will swell to about $1\frac{1}{23}$ gallons near the boiling point. This explains why a well filled kettle placed on the fire will often overflow long before the water boils, and why due allowance must be made in hot water cisterns for increase in bulk. Since water swells in this way it follows that hot water is lighter, bulk for bulk, than cold water. A gallon of cold water has been stated to weigh 10 lb., but a gallon of water nearly boiling weighs hardly more than 9½ lb. From this it follows that hot water will tend to rise in a system of pipes containing hot and cold water, which fact lies at the basis of all heating circulation systems.

When water freezes it expands. That this is so is obvious, since ice floats on water, and therefore must occupy more space bulk for bulk than water. This expansion is considerable, being roughly 10 per cent. of the original bulk. The force of this expansion cannot be resisted by the strongest materials; hence if water is confined in a pipe or vessel and freezes it will burst the vessel if no room exists for expansion. Damage to water systems produced in this way does not, of course, make itself apparent until the thawing of the ice allows the leak to become apparent.

Expansion of Air.

Water and other liquids expand much more than solid things, but air and all gases have a far greater expansion than either of the above classes of materials. If a given bulk of air at the freezing point be heated to the boiling point of water it expands about $\frac{1}{4}$th or more than $\frac{1}{3}$ of its original bulk; hence much greater allowance must be made for air than for other cases of expansion discussed. There is one great difference, however, between the expansion of air and that of solids and liquids, since air expansion can be resisted. Of course the resisting pressure which has to be applied must increase as the tendency to expand increases, but a very simple relation exists between the pressure and bulk of air. If this bulk would, if allowed free expansion, become twice as much, the pressure must be doubled to keep the bulk the same. These properties of air explain its use for air cushions to reduce concussion in pipes.

Deceased Builders' Estates.

Mr. John Brown, retired builder, 84, Strathmartine-road, Dundee, left estate of the gross value of £1,844 17s. 5d.

Mr. James Wilson, J.P., builder, 6, Merchiston-park, Edinburgh, and 25, Riego-street, Edinburgh, left estate to the value of £20,577.

Competitions, Contracts, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts, —; Tenders, —; Public Appointments, xviii; Auction Sales, xx. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

BUILDING AND PAINTING

SEPTEMBER 10.—**Rathcrum.**—REPAIRS.—The R.D.C. invite tenders for the carrying out of repairs to the cottage at Callowhill (Newcastle Upper E.D.), M. Condren occupier. Particulars from Mr. P. W. Sheehan, Clerk of the Council.

NO DATE.—**Cwmaman.**—PAINTING.—For painting outside wood work of Zion Baptist Chapel and three adjoining cottages; also Rose Aman Cottage, Cwmaman. Particulars from Mr. John Evan Harris, 16, Morris-street, Cwmaman, Aberdare (Sec.).

FURNITURE, MATERIALS, etc.

SEPTEMBER 8.—**Antrim.**—PAINTS AND OILS, &C.—Supply to the Antrim District Lunatic Asylum Committee of paints and oils, timber, &c. Forms from the Clerk of the Asylum, Holywell, Antrim.

SEPTEMBER 10.—**Morpeth.**—TIMBER, &C.—Supply to the Visiting Committee of the Northumberland County Asylum, Morpeth, of timber, oils, and paints, glass, &c., for the six months ending March 31, 1918. Forms from the Clerk and Steward at the Asylum.

SEPTEMBER 11.—**London.**—FOLDING TABLES.—Supply to the Commissioners of His Majesty's Works, &c., of 500 folding tables. Forms of the Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W. 1.

SEPTEMBER 11.—**London.**—SHELVING.—Supply to the Commissioners of His Majesty's Works, &c., of 500 cases of shelving. Forms of the Controller of Supplies, H.M. Office of Works, &c., King Charles-street, Westminster, London, S.W. 1.

SEPTEMBER 12.—**Portsmouth.**—TIMBER, &C.—Supply to the B.G. of timber, paints, &c. Forms at the Guardians' Offices, St. Michael's-road, Portsmouth. Mr. E. H. Mitchell, Clerk.

SEPTEMBER 18.—**Wolverhampton.**—Paints, &c.—Supply to the Guardians of paints, &c. Forms of Mr. Frank Harrison, Clerk to the Guardians, Poor Law Offices, Wolverhampton.

SEPTEMBER 19.—**Farnham.**—MATERIALS.—Supply to the Guardians of building materials, &c. Forms from the Master of the Workhouse.

ENGINEERING, IRON AND STEEL.

SEPTEMBER 12.—**Newry.**—FILLING CULVERT, &C.—Newry Port and Harbour Trust invite tenders for the construction of a filling culvert and sluices at the Victoria Lock of the Newry Ship Canal. Plans, &c., at the Harbour Office, Newry; or of the Consulting Engineers, Messrs. Delap & Waller, 115, Grafton-street, Dublin.

SEPTEMBER 13.—**London.**—ENGINEERS' OILS, &C.—Supply to the West Ham Guardians of engineers' oils, &c. Forms of Mr. L. E. Fraquet, Acting Clerk, Board Room, Union-road, Leytonstone, E. 11.

NO DATE.—**London.**—HEATING SYSTEM.—Lambeth Guardians invite tenders for the conversion of a portion of the hot water heating system at their Infirmary, Brook-street, Kennington, S.E., into a low-pressure steam heating system. Form of the Clerk to the Guardians, Brook-street, S.E. 11.

ROAD, SANITARY, AND WATER WORKS.

SEPTEMBER 18.—**Berkhamsted.**—FILTER BED, &C.—The Berkhamsted and Northchurch Joint Sewerage Committee invite tenders for the construction of a filter bed and works incidental thereto at the Sewerage Farm, Berkhamsted. Plans, &c., of the Surveyor, Mr. J. R. Hadfield, 135, High-street, Berkhamsted.

SEPTEMBER 19.—**Basingstoke.**—ROAD ROLLING.—Basingstoke R.D.C. invite tenders for steam road rolling. Specification from the Surveyor, Mr. R. Forrester, Chequers-road, Basingstoke.

SEPTEMBER 27.—**Hendon.**—GRANITE, &C.—Supply to the R.D.C. of broken granite, tarpaving material, tarviated granite, granite chippings and gravel. Forms of the Surveyor, Mr. J. A. Webb, Great Stanmore.

Public Appointments.

* CHELMSFORD.—Chief Clerk (temporary) is required by the Essex County Council, County Surveyor's Department. Applications, in writing, to County Surveyor, Chelmsford.

* SEPTEMBER 13.—**Macclesfield.**—The Governor, Industrial School, Brook-street, Macclesfield, invites applications for position of carpenter and wood-work master.

Auction Sale.

*SEPTEMBER 18.—**London.**—Messrs. J. T. Skelding & Co. will sell the whole of a builders' & contractors' stock, plant and machinery, at the Arches, Nos. 549 and 550, Station-road, Brixton. Auction Offices, 48, Gresham-street, Guildhall, E.C. 2.

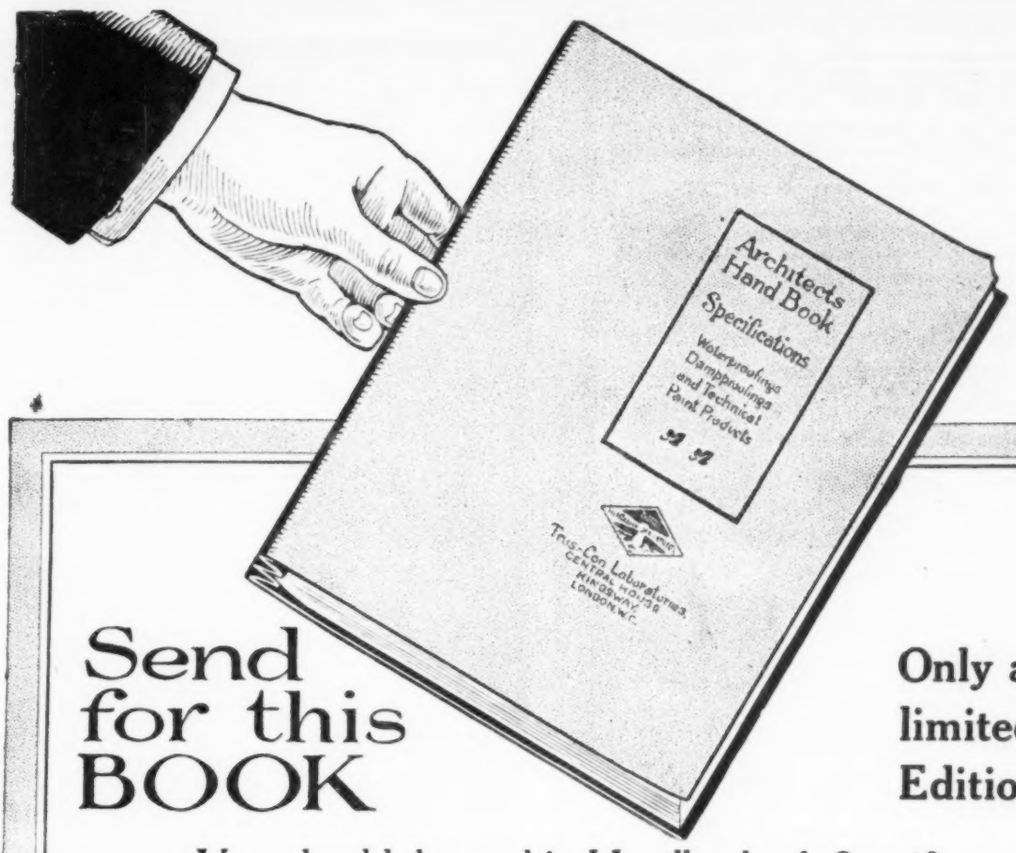
RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	11	11	11	11	11	10½	10	8	8	8
Accrington	11½	11½	11	9½	9	10	9½	7	7	7
Altrincham	11	1/1	1/-	1/-	9	1/1	11½	9	9	9
Ashton-under-Lyne	1/-	1/1	1/0½	1/-	1/-	1/-	11	8½	9	9½
Barnsley	10½	11½	10½	10½	9	1/-	9½	8½	8½	8½
Barrow-in-Furness	11½	11½	11½	11½	11½	11½	11	8	8½	8½
Barry	1/-	1/-	1/-	1/-	—	1/-	11	9	9	9
Bath	9	9	9	8½	8½	9	8	6½	6½	6½
Bedford	8	8	9	8½	8	9	6½	5½	5½	6
Birkenhead	1/-	1/-	1/1	1/1	1/-	1/-	11	9	9	9
Birmingham	1/0½§	1/0½§	1/0½§	1/0½§	1/0½§	1/0½§	11§	9½§	9½§	9½§
Bishop Auckland	9	9	10	9½	1/-	9	8	6½	6½	7½
Blackburn	11½	11½	11½	11	10½	1/-	10½	7½	8	8
Blackpool	1/-	11	11	9½	8½	9½	10½	6	6	6
Bolton	1/1	1/-	1/-	11½	11½	1/-	11½	7½	7½	9
Bournemouth	8½	10	10	8½	8½	10	9½	7½	7½	7½
Bradford	1/0½	1/0½	1/-	1/-	10†	10†	10½†	9½	9½	9½
Bridgwater	8½	8½	8½	8½	8½	8	7½	6	6	6
Brighton	9½	9½	9½	9½	—	9½	8	7	7	7
Bristol	11½	1/-	1/-	1/-	—	1/-	11	9	9	9
Burnley	11½	10½	11½	10½	9	10½	10½	7	7½	7½
Burton-on-Trent	9½	10½	10½	10	9	10½	9½	7½	7½	7½
Bury	1/-	1/-	1/-	11	11	11½	10½	8	8½	8½
Cambridge	11	10½	10½	10½	10½	11	9	7½	7½	7½
Cardiff	1/-	1/-	1/-	1/-	1/-	1/-	11	9	9	9
Chatham	9½	10	10	9‡	9‡	10	8½	7	7	7
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	9½	9½	9½	9½	—	9½	9½	6½*	6½*	6½
Chester	10½	11	11	11	11	11	10	6½	7½	7½
Chesterfield	9	10½	10	8	9	8½	8½	5½	5½	5½
Colchester	8	8½	8½	8	8	9	6	5½	5½	5½
Coventry	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	10	10	10½
Crewe	9	9½	9	10½	10	9½	10	7	7	7½
Darlington	11½	11½	11½	11½	10	9½	9	8½	8½	8½
Derby	11	11	11	11	11	10½	9½	8	8	8½
Doncaster	9½	10½	10½	9½	9½	9	8	6½	6½	7½
Dudley	9½	11	11	10	10	9½	8½	8	8	8½
Durham	9½	9½	9½	9½	10	9	8½	6½	6½	7
East Glam. and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	9½	9½	9½	9½	9½	9	8½	8	8	8
Folkestone	8½	9	9	9½	8½	9	8	7	7	7
Gloucester	8	9½	9½	8½	8½	9½	8½	7	7	7
Grantham	8	8	7½	7½–8	7½–8	8½	6½	5	5	5
Grays	—	11	11	—	—	11	9½	9	9	9
Grimsby	9	10	10½	10½	10	10	10	8	8	8
Great Yarmouth	8	8	8	—	8	8	6½	5	5	—
Halifax	1/-	1/-	11½	9	9	11	10	9½	9½	9½
Harrogate	10½	9½	11	9	8	10	9½	7½	7½	7½
Hartlepools	11½	1/-	1/-	1/-	1/-	10½	9	9	9	9½
Hastings	8½	8	8	8½	8	8	7	6½	5½	6½
Hereford	10	10	10	10	10	10	9	7½	7½	7½
Huddersfield	1/-	11	11½	9½	11	9	8½	9	9	9
Hull	11½	11½	11½	11½	11½	1/-	9	9½	9½	9½
Ipswich	9½	9½	9½	10	9½	10	8	7	7	7
Lancaster	10½	10½	10	10	9½	10	9	6	6½	7½
Leamington Spa	9	9½	9½	8½	9	9½	8½	6½	6½	6½
Leeds	1/0½	1/0½	1/-	11½	11½	1/-	10	9½	9½	10
Leicester	11½	11½	11½	11½	11	10½	9	9	9	9½
Lincoln	10½	9½	9½	9	8½	10½	8	6	5½	6½
Liverpool	1/1	1/1	1/1	1/0½	1/0½	1/-	11½	9	9	9
Llanelly	9½	9½	9½	8½	9	8½	8	5½	5½	5½
London	1/1½	1/1½	1/1½	1/1½	—	1/2	11	10	10	10
Loughborough	10	10	10½	10	10	10	9	8½	8½	9½
Luton	9½	10½	10½	8½	9	8½	9½	8½	8½	8½
Maidstone	10	10	10	10	10	10	9	7	7	7
Manchester	1/1	1/1	1/1	1/0½	11	1/2	1/-	9	9	9
Mansfield	8½	11	10½	8½	—	10½	9	8	8	8½
Merthyr Tydfil	11	11	11	11	11	11	10	8½	8½	8½
Middlesbrough	11½	1/-	1/-	1/-	1/-	10½	9	9	9	9½
Newcastle-on-Tyne	1/0½	1/0½	1/0½	1/0½	1/-	10½	11	9½	9½	9½
Newport, Mon.	11½	11½	11½	11½	11½	1/0½	10½	8½	8½	8½
Northampton	11	11	11	11	11	11	10	8½	8½	8½
Norwich	8½	8½	8½	8½	8	8½	7½	6	6	6
Nottingham	1/-	1/-	1/-	11½	11½	1/1	11½	9½	9½	10
Oldham	1/-	1/-	1/1	11½	11	11½‖	11½	8½	8½	9
Oxford	9½	9	9	9	9	9	8	6½	6½	6½
Plymouth	10*	10*	10*	10*	10*	10*	8½*	8½	8½	8½
Pontypridd	11	11	11	11	11	11	10	8	8	8
Portsmouth	10½	10½	10½	10½	10½	9½	8½	8	8	8
Preston	10½	1/-	11	10½	10½	11	10½	7½	8	8
Reading	9	9½	9½	10½	—	9½	8½	6½*	6½*	6½*
Rochdale	11½	11½	1/-	11½	10½	1/0½	11	8½	8½	9
Rochester	8	10	10	9	9	10	8½	7	7	9
Rugby	11	11	11	11½	1/-	11	10	8	8	8½
St. Albans	10	10	10	10	10	10	9	8	8	8
St. Helen's	1/-	1/-	1/-	1/-	1/-	11	10½	7	7½	8
Scarborough	9	9½	9	8½	8	9	8	7	7	9
Sheffield	10½	11½	1/-	9½	10½	1/1	10	9	9	9½
Shrewsbury	8½	9½	9½	9½	—	8½	7	6½	6½	8½
Southampton	11½	11½	11½	11½	11½	10½	8½	8½	8½	8½
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	6	6
Southport	11½	11	11½	11	11	11	11	7	7½	7½
South Shields	1/0½	1/0½	1/0½	1/0½	1/-	10½*	11	9½	9½	9½
Stockport	1/1	1/0½	1/0½	11½	10½	1/-	10½	8½	9	9
Stockton-on-Tees	11½	1/-	1/-	1/-	1/-	10½	9	9	9	9½
Stoke-on-Trent	11½	11½	11½	11½	—	10½	10½	8½	8½	8½
Stroud	9	9	9	9	9	9	8½	7	7	9
Sunderland	1/-	1/-	1/-	1/-	1/-	9½	11	9	9	9
Swansea	1/-	1/-	1/-	1/-	1/-	1/-	11½	9	9	9
Taunton	8	8	8	8	—	8	7	5½	5½	5½
Torquay	10	10	10	10	10	10	10	8	8	9
Wakefield	10	11	10½	9½	8½	10½	10	9	8½	8½
Walsall	11½	11	11	11	11	11	9½	8½	8½	7½
Warrington	11	1/-	11½	1/-	1/-	11½	10½	7	7½	8
West Bromwich	11	11	10½	10½	—	10	9	8	8	9
Wigan	11½	1/-	11½	11	10½	11½	10½	9	9	9
Windsor	9	9	9	10	—	9	—	6	6	6
Wolverhampton	1/-	1/-	1/-	11	11	1/-	10½	9	9	9
Worcester	9	9½	9½	9½	9½	9½	8	7½	7½	7½
York	9½	9½	9½	10½	10	10½	8½	8½	8½	8½

The Masons' rate given is for bankers; fixers usually ½d. per hour extra.

* War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 2s. 6d. per week granted. ‖ War bonus of 6s. per week granted. § 1d. per hour extra for men engaged on munition work.



Send for this BOOK

Only a limited Edition.

You should have this Handbook of Specifications within easy reach. Nowhere else are the problems of WATERPROOFINGS, DAMP-PROOFINGS & TECHNICAL COATINGS so fully covered by complete and accurate specifications. It will save you no end of time and trouble, for the correct specifications for your own particular problem are in its pages

TRUS-CON PRODUCTS

are the best obtainable for the specified purpose. They are used by the foremost Architects, Builders and Contractors throughout the world. Three principal products are—

Trus-Con **AGATEX** *For Crumbling Floors.*	*Trus-Con* **FLOOR HARDENER**	*Trus-Con* **WATERPROOFING PASTE** *Concentrated.*

Write To-day for Handbook to

TRUS-CON LABORATORIES, 7, CENTRAL HOUSE, KINGSWAY, LONDON, W.C.2.

Telegrams—"Eirwaljas, London." *Telephone—Regent 4380.*

THE TRUS CON LABORATORIES

Fiberlic

The Building Board made from Root Fibres

Highly fire-resisting.—Very hard and rigid.—Easy to fix.—Permanent when fixed.—Will not warp.—Damp-proof.—Non-conductor of heat, cold and sound.

Fiberlic is the only board made from the tough Strong Fibre of a *root*, this is why it has a 50% greater bursting strength than any other board.

ENTIRELY OBVIATES CRACKED WALLS AND FALLING CEILINGS

Write for samples and particulars to

MacAndrews & Forbes, Ltd.

Fiberlic DEPT.

2, Broad Street Place, E.C. 2.

ENDURITE

ASBESTOS-CEMENT

(REGISTERED TRADE MARK)

TILES & SHEETS
FLAT & CORRUGATED

For the rapid construction of

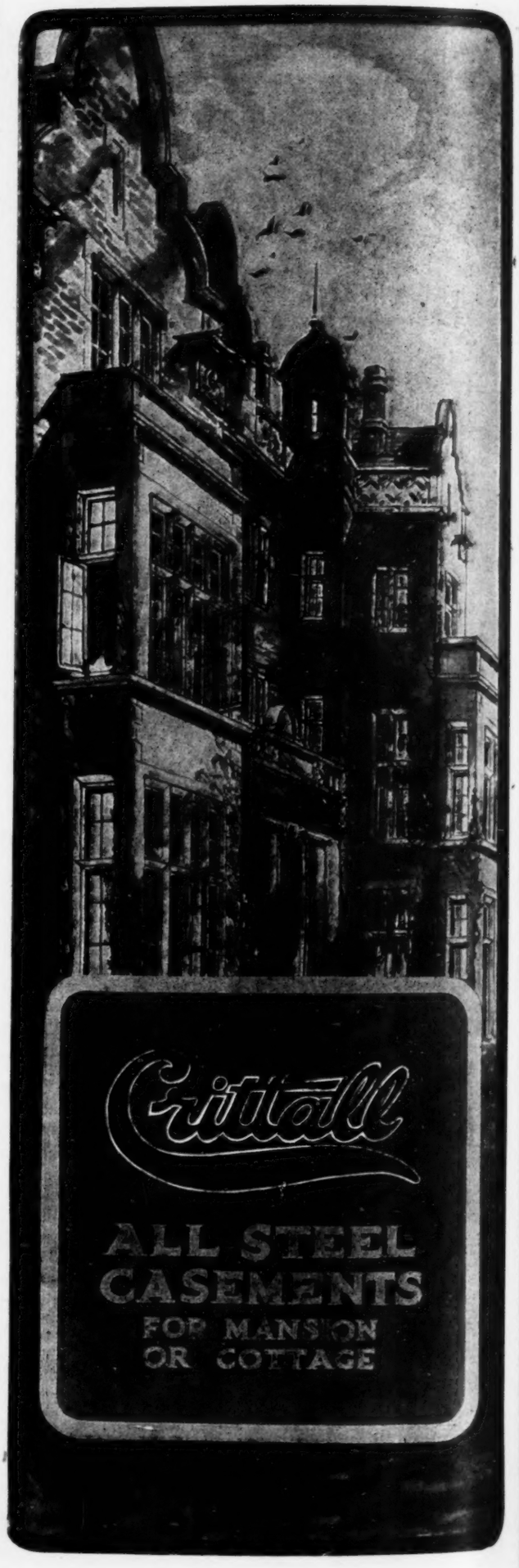
MUNITION WORKS : HOSPITALS : HUTMENTS AND BUILDINGS OF EVERY DESCRIPTION

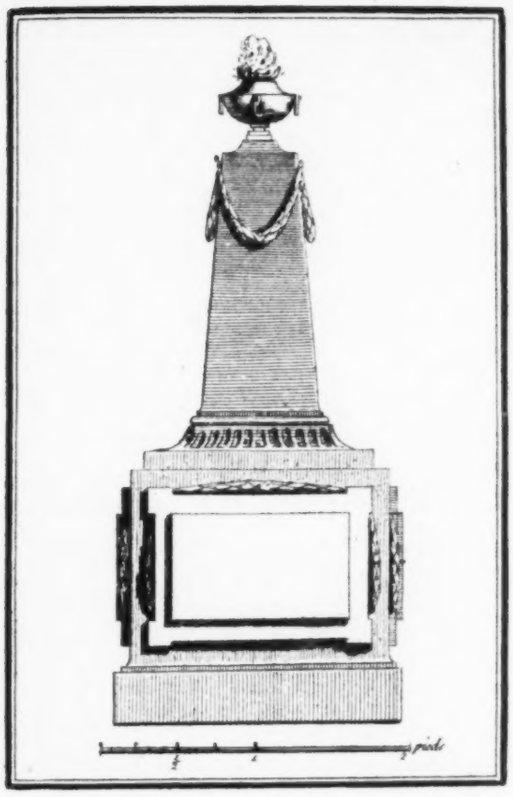
The Ideal Building Material

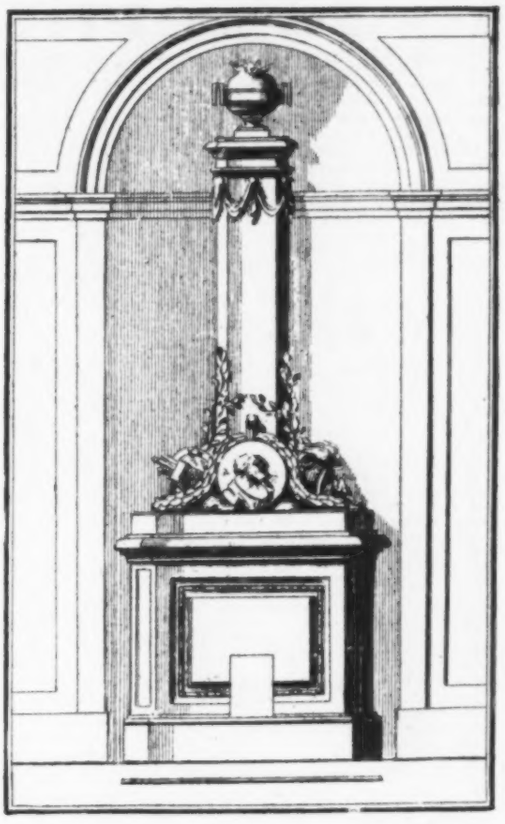
WEATHER-PROOF, FIRE-RESISTING
ECONOMICAL, EVERLASTING

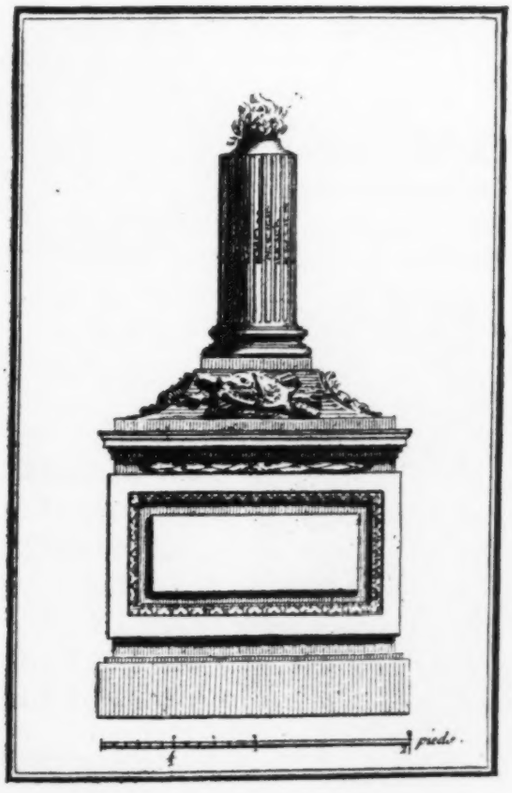
TRIBE & ASTIN

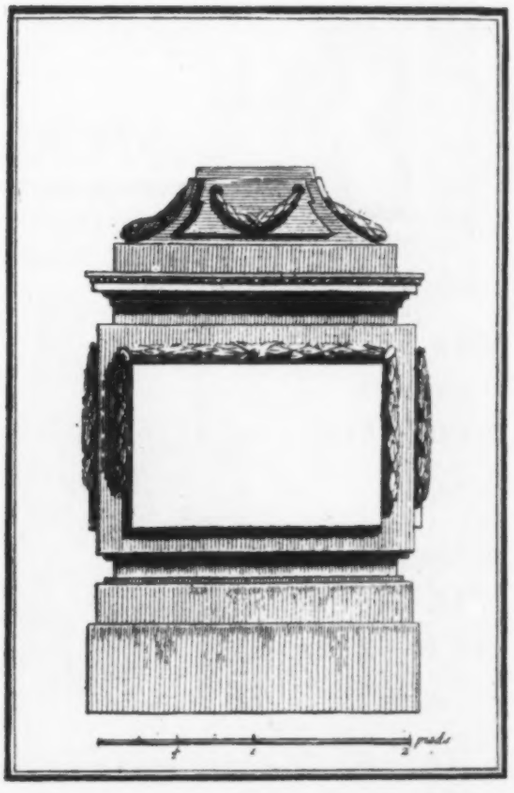
TREVELYAN BUILDINGS
MANCHESTER











Four Monuments from an Old French Book.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

CHELTENHAM.—Plans passed:—New bathroom, Hotel Suffolk, for Miss G. M. Wellsted.

DOVER.—The R.D.C. has before it plans by Mr. W. Pollen, of Shepperdswell, for the conversion of a store into two cottages.

DUMBARTONSHIRE.—Dumbartonshire C.C. have decided to tar-macadam 4 miles 4 furlongs and 162 yards of the roads in the western district. The work is to be carried out in Bonhill, in part from Dumbarton to Balloch, via Renton, Balloch-road, Cardross-road near Helensburgh, and on Garelochside.

LUTON.—Plans passed by T.C.:—J. W. Garrard, office and lavatory, George-street; G. C. Hickman, motor house, Biscot-road and Marlborough-road; the Trustees of the late F. Crawley, drainage of lodge, London-road; Barford Bros., open shed, William-street; F. Gostelow, alteration to basement, Upper George-street; the Thermo Electric Ore Reduction Co., Ltd., new furnace shop, Kingsway; G. Kent, Ltd., addition to cloak room, mess room, machine shop, Biscot-road.

NEWCASTLE.—The Newcastle Corporation Housing Committee has given instructions for the preparation of a housing scheme that could be commenced at the close of the war, for presentation to the Government.

NORTHAMPTON.—Repairs and decorations are to be carried out at premises for crèche, at 41 and 43, Newland, for the Northampton Council.

RATHFRILAND.—A L.G.B. inquiry is to be held into the application of the Newry No. 1 (County Down) R.D.C. for sanction to a loan of £3,750 for the purpose of carrying out a new sewerage scheme for the town of Rathfriland.

SALFORD.—Plans passed by T.C.:—Warehouse, Cambridge-street, Broughton; temporary building, Bolton-road, Pendleton; alterations and additions to premises, Eccles New-road, Pendleton; adaptation of premises, Ordsall-lane, Crew-place, Salford; staircase, premises, George-street, Salford; temporary building, Vere-street, Salford; factory accommodation, Trafalgar-street, Broughton; alterations and additions to premises, Orsdall-lane, Salford; alterations to premises, St. Luke's-road, Pendleton; alterations and additions Duchy-road, Pendleton.

TREDEGAR.—Tredegar Council has received a communication from the Monmouthshire C.C., asking for a tracing of the proposed site of 82 houses to be erected by the council at Nantybwch. The application was granted.

WREXHAM.—At a meeting of the Wrexham R.D.C. the engineer reported that the following number of houses was required in the Council's area to meet the increased population and to replace houses unfit for human habitation:—Bersham 80, Broughton 300, Brymbo 150, Cefn 130, Esclusham Below 50, Gwersyllt 150, Rhos and Pen-y-cae 400, Ruabon 100, Gresford 50, Stansty 50, Acton 10, Erddig 20, Holt 40, other parishes (17) 170, a total of 1,700. The schemes will roughly mean an expenditure of £500,000. It was decided to approve the report and to forward it to the L.G.B., and the engineer was instructed to proceed with the preliminaries of the schemes.

* See also our list of Competitions, Contracts, &c. on page 144.

BARRY GARDEN SUBURB.

Barry Garden Suburb, which has been in course of construction for the past three years, was formally opened on Saturday last, on the completion of the first block of fifty-two houses. Mr. W. Jones Thomas J.P., chairman of Barry Garden Suburb, Ltd., presided, supported by Major David Davies, M.P. (chairman of the Welsh Housing and Town Planning Trust), Sir Evan D. Jones, Bart., Mr. D. Lleufer Thomas, J.P., Mr. D. Morgan Rees, J.P., Professor Thomas Jones, Councillor Howell Williams, Mr. Llewellyn Davies, J.P., Mr. T. Alwyn Lloyd, and others. Mr. D. Lleufer Thomas formally dedicated a coppice to the children of the suburb as a playground.

Subsequently the company visited the Co-operative Hall, Barry, where a horticultural show was held in connection with the tenants, and a meeting followed. Major David Davies, M.P., in a speech, recalled an occasion when as a lad he came to Barry with his grandfather and fell into the water and was nearly drowned. At that time there were no such ideas as were embraced in the garden city movement, otherwise Barry would have been one of the most beautiful garden cities in South Wales, because the site of the town lent itself admirably to such an undertaking. For the success of the movement at Barry they had to thank Mr. Romilly, the owner of the land, for leasing it to them, and the tenants and the local committee for the enthusiasm with which they had taken up the idea. A large number of houses were wanted in South Wales, for even in pre-war times there was a great demand and a large amount of overcrowding. They had also to make provision for their discharged and disabled soldiers, and he hoped there would be colonies housed under ideal conditions. Sir Evar Jones, Bart., depicted Barry as he first knew it twenty-seven years ago, and contrasted it with the Barry of the present day. There was still a housing problem to be settled by two great parties who up to the time of the present war had held divergent views. The community most affected, however, were the working classes, and if this community were to be put in a proper position to hold their own their status must be raised, and one of the greatest means of doing that was by the provision of good housing and healthful surroundings.

THE BUILDING TRADE AND EMPLOYMENT EXCHANGES.

A JOINT meeting of the employers' and workmen's committees recently established by the Minister of Labour to advise on the work of the Employment Exchanges in connection with the building trades was held at the offices of the Employment Department of the Ministry on Friday last. The Committee considered and confirmed certain arrangements which had been agreed to at previous meetings of the separate committees regarding the more rapid placing of workmen in employment through the Exchanges and it was agreed that the arrangements come to should be communicated to the building trade employers throughout the country, with a view to enlisting their co-operation in the matter. The question of the action to be taken by the Exchanges during periods of trade disputes was also considered.

YOUNG & MARTEN'S
NO. 2 SERIES OF
"Supremus" Specialities

The "DELIGHT" Cooking Range.

SELF-SETTING AND COMPACT

STOCKED IN ALL WIDTHS 24 to 42 ins.

The "CALIDA" Domestic Boiler.

BURNS REFUSE

Gives liberal supply of HOT WATER for CULINARY and HEATING PURPOSES

ILLUSTRATED CATALOGUE, 750 pages—FREE to applicants specifying their requirements to

YOUNG & MARTEN, LTD.

'Phone—STRATFORD 1 (4 lines) CALEDONIAN WORKS, STRATFORD, LONDON, E. 15. Telegrams—"YEMART, LONDON."

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. Since our last issue several prices have been revised.—Ed.]

**** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1,000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 10 0
Picked Stocks for Facings	3 5 0

Per 1000, Delivered at Railway Depot, London

	£ s. d.		£ s. d.
Flettons	1 18 0	Best Blue Pressed Staffordshire	5 15 0
Best Fareham Red	4 0 0	Do. Bullnose	6 0 0
Best Red Pressed Ruabon Facing	6 0 0	Best Stourbridge Fire bricks	9 5 0

GLAZED BRICKS—

Best White, Ivory, and Salt Glazed Stretchers	14 17 6	D'ble Str'tch'rs	20 7 6
		D'ble Headers	17 7 6
Headers	14 7 6	One Side and two Ends	21 7 6
Quoins, Bullnose and 4½in. Flats	18 7 6	Two Sides and one End	22 17 6
		Splays and Squints	19 17 6

Glazed bricks priced at so much each, 25 per cent. advance on list.

Second Quality, £1 per 1,000 less than best.

	s. d.	
Thames Ballast	8 9	per yard, delivered.
Pit Sand	11 0	
Thames Sand	12 0	,, ,, ,,
Best Washed Sand	12 0	,, ,, ,,
¾ in. Shingle for Ferro-Concrete	11 6	,, ,,

Per ton, delivered.

	£ s. d.		£ s. d.
Best Portland Cement	2 10 0	..	2 13 0

Do. £2 6s. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 1 7 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 1s. 3d. each and credited at 1s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Westbourne Park, G.W.R., South Lambeth, G.W.R., or Nine Elms, or L. & S.W.R., per ft. cube	2 5½
Do. do. delivered on road waggons at Pimlico Wharf or Nine Elms Depot, per ft. cube	2 6½

White basebed, 2d. per ft. cube extra.

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Dpot.

	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red Freestone	2 2
Beer in blocks	1 7½		
Grinshill in blocks	2 4	Red & White Mansfield random block	2 9
Darley Dale in blocks	2 5	Yellow Magnesian Limestone do. do	3 3

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depot	s. d.
Scappled random blocks	3 4

Per Ft. Super. Delivered at Railway Depot.

6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 5
4 in. rubbed two sides, ditto	2 8
3 in. sawn two sides slabs (random sizes)	1 0½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 8½
1½ in. to 2 in. ditto, ditto	0 6½

HARD YORK—

Per Ft. Cube, Delivered at Railway Depot.	
Scappled random blocks	3 0

Per Ft. Super., Delivered at Railway Depot.

6 in. sawn two sides landing to sizes (under 40ft. super.)	2 3
6 in. rubbed two sides ditto	2 7
3 in. sawn two sides slabs (random sizes)	1 0
2 in. self-faced random flags	0 5

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles or hand-made sand-faced tiles from either Broseley or Staffordshire district	3 0 0
Ornamental ditto	3 2 6
Hip and valley tiles (per dozen)	0 6 0

SLATES.

	Per 1,000 of 1,200 f.o.r. London. £ s. d.
Best Blue Bangor Slates, 20 by 10	13 5 0
,, ,, 16 by 8	6 12 6
First quality" ,, 20 by 10	12 15 0
,, ,, 16 by 8	6 10 0
Best Blue Portmadoc 20 by 10	13 5 0
,, ,, 16 by 8	6 12 6
First quality ,, 20 by 10	12 12 6
,, ,, 16 by 8	6 7 6

WOOD.

BEST BUILDING REDWOOD. Imported sizes.

Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in. ..... } *Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn*

3 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in. ..... }

WOOD (*Continued*).

BEST BUILDING REDWOOD.

Battens: 2 in., 2½ in., and 3 in. by 8 in. .....
2 in., 2½ in., and 3 in. by 7 in. .....
2 in., 2½ in., and 3 in. by 6 in. .....
Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in. ....
3 in. by 4 in., and 3 in. by 4½ in. .....
Boards: 1 in., 1¼ in., and 1½ in. by 6 in. and 7 in. .....
⅞ in. .....
Seconds .....
Sawn pitch pine logs (about 35 cu. ft. average .....
Do. 6 in. to 10 in. ..

Best Pitch Pine Deals ....
Under 2 in. thick .....

JOINERS' WOOD

White Sea First Quality Red: 4 in. by 11 in....
3 in. by 11 in., and 2 in. by 11 in. .....
4 in. by 9 in. .....
3 in. by 9 in., and 2½ in. by 9 in. .....
3 in. by 11 in. boards ..
7 in. and 8 in. battens ..
7 in. and 8 in. boards ...
Archangel White Deals—
Best 3 in. by 9 in. and 10 in. and 11 in. .....
Seconds, do. .....
U.S. Battens .....
Prepared Floorings and Matchings. Seconds Swedish Red and equal—
1¼ in. by 6½ in. planed and shot .....
1½ in. by 6½ in. planed and matched .....
1 in. by 6½ in. planed and shot .....
1 in. by 6½ in. planed and matched .....
⅞ in. by 6½ in. planed, matched, and beaded, or V jointed .....
1 in. by 6½ in. do. .....
Columbian or Oregon Pine, best quality .....
Yellow Pine—First regular sizes .....
Oddments .....
Seconds, regular sizes ..
Oddments .....
Kauri Pine—Planks per ft. cube .....

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn.

Dry Wainscot Oak, per ft. super, as inch	0 1 3	..	0 1 6
⅞ in. do. do.	0 0 10	..	0 1 2
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch	0 1 6	..	0 2 6
Cuba, Mahogany	0 1 6	..	0 2 6
Dry Walnut, American, per ft. super, as inch	0 1 6	..	0 2 6
French, "Italian," Walnut	0 1 6	..	0 2 6
Teak, per load (Rangoon or Moulmein)	30 0 0	..	40 0 0
Do. do. (Java)	30 0 0	..	40 0 0
American Whitewood planks, per ft. cube	0 9 0	..	0 10 0
Glue, per cwt.	5 0 0	..	5 5 0

METALS.

JOISTS, GIRDERS, &c.

Rolled Steel Joists, ordinary sections, basis price .....
Plain Compound Girders, ordinary sections .....
Plain Compound Stanchions
Angles, Tees, and Channels, ordinary sections .....
Fitch Plates .....
Cast Iron Columns and Stanchions, plain ordinary patterns .....

Prices controlled by the Ministry of Munitions.

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Tubes.		Fittings.
Gas	45	....	50
Water	40	....	47½
Steam	35	....	45
Galvanised gas	27½	....	42½
,, water	18½	....	40
,, steam	12½	....	37½

L.C.C. SOIL PIPE— London Prices.

	Pipes Coated.		Bends.		Branches.
	s. d.		s. d.		s. d.
2 in. per yd.	2 8	....	2 1	each	2 6
2½ in. ,, ,,	3 1	....	2 4	,,	3 2
3 in. ,, ,,	3 10	....	2 6	,,	3 9
3½ in. ,, ,,	4 2	....	3 2	,,	4 4
4 in. ,, ,,	4 8	....	3 6	,,	5 0

RAIN-WATER PIPES, &c. London Prices.

	Pipe.		Bends.		Branches.
	s. d.		s. d.		s. d.
2 in. per yd.	2 0	....	1 2	each	1 8
2½ in. ,, ,,	2 2	....	1 5	,,	2 0
3 in. ,, ,,	2 6	....	1 9	,,	2 6
3½ in. ,, ,,	3 0	....	2 1	,,	3 0
4 in. ,, ,,	3 3	....	2 6	,,	3 8

L.C.C. DRAIN PIPES,—9 ft. lengths. London Prices.
4 in., 5s. 3d. .. 5 in., 6s. 3d. .. 6 in., 7s. 6d.

METALS (*Continued*).

Per ton in London.

	£ s. d.		£ s. d.
IRON— Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars— good merchant quality	16 10 0	..	17 10 0
Staffordshire "Marked Bars"	17 10 0	..	18 0 0
Mild Steel Bars	19 0 0	..	19 10 0
Steel Bars, Ferro-Concrete quality, £19 basis price.			
Hoop Iron, basis price	20 0 0	..	20 10 0
,, Galvanised	33 0 0	..	—

(* And upwards, according to size and gauge.)

Sheet Iron Black— Ordinary sizes to 20 g.	22 0 0	..	22 10 0
,, ,, 24 g.	23 0 0	..	23 10 0
,, ,, 26 g.	24 0 0	..	24 10 0
Sheet Iron, Galvanised flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	32 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	32 0 0	..	32 10 0
Ordinary sizes to 26 g.	35 0 0	..	35 10 0
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	35 0 0	..	—
,, 22 g. and 24 g.	35 10 0	..	—
Ordinary sizes to 26 g.	38 10 0	..	—
Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 8 ft. 20 g.	31 0 0	..	—
Ordinary sizes, 22 g. and 24 g.	31 10 0	..	—
Ordinary sizes, 26 g.	32 0 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	28 0 0	..	29 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

Delivered in London.

	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	38 10 0	..	—
Pipe in coils	39 0 0	..	—
Soil Pipe	42 0 0	..	—
Compo pipe	42 0 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Orders for over 1 cwt. should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E)], Hotel Victoria, S.W.

Allowance for old lead, £26 per ton.

COPPER— Strong Sheet per lb.	0 1 6	..	—
Thin ,, ,,	0 1 8	..	—
Copper nails ,,	0 1 6	..	—
Copper wire ,,	0 1 8	..	—
BRASS— Strong Sheet ,,	0 1 6	..	—
Thin ,, ,,	0 1 8	..	—
TIN—English Ingots ,,	0 2 6	..	—
SOLDER—Plumbers' ,,	0 1 1	..	—
Tinmen's ,,	0 1 5	..	—
Blowpipe ,,	0 1 7	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.
15 oz. fourths 5d.	26 oz. thirds	7½d.
,, thirds 5½d.	32 ,, fourths	8d.
21 ,, fourths 6d.	,, thirds	9d.
,, thirds 6½d.	Fluted Sheet, 15 oz.	6½d.
26 ,, fourths 6½d.	21 ,,	7½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
⅛ Rolled plate	4d.
⅛ Rough rolled and rough cast plate	4½d.
¼ Rough rolled and rough cast plate	4½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6d.
Ditto, tinted	7d.
Rolled Sheet	5d.
White Rolled Cathedral	5d.
Tinted do.	5½d.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil in pipes per gallon	0 5 3
,, ,, ,, in barrels ,,	0 5 4
,, ,, ,, in drums ,,	0 5 7
Boiled ,, ,, in barrels ,,	0 5 7
,, ,, ,, in drums ,,	0 5 10
Turpentine in barrels ,,	0 4 9
,, in drums ,,	0 5 0
Genuine Ground English White Lead, per ton	53 10 0

(In not less than 5 cwt. casks.)

GENUINE WHITE LEAD PAINT—

"Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots, per ton delivered	69 0 0
Red Lead, Dry (packages extra) per ton	42 0 0

Orders for over 28 lb. of White Lead, White Lead Paint and Red Lead should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty	per cwt.	0 14 6
Stockholm Tar	per gallon	0 3 6
Filocol	per cwt.	0 11 6

VARNISHES, &c.

	Per gallon £ s. d.
Fine Pale Oak	0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 6
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 6
Extra Pale French Oil	1 1 0
Eggshell Flatting	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 18 0
French and Brush Polish	0 12 0

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday*.

* Denotes *accepted*. † Denotes *provisionally accepted*.

‡ Denotes *recommended for acceptance*.

CLONES.—For alterations and extensions to the Infirmary, for the B.G. :—

McGoldrick & Morgan	£646	18	0
John Tierney	397	0	0
*Joseph McMahon, Clones	394	0	0

LYME REGIS.—For supply of 100 tons of 2½ in. granite and 40 tons of ¾ in. chippings to the Town Council :—

*Teign Valley Granite Co.—at 12s. 7d. per ton for granite, and 11s. 1d. per ton for chippings.

MANCHESTER.—The following tenders have been accepted by the Corporation :—

Tramways Department.

Hadfields, Ltd., Sheffield—Special track work.

Electricity Department.

Babcock & Wilcox, Ltd.—Tubes, &c.

Lee Recorder Co., Ltd., London—Recorders.

Paving Committee.

T. H. Halsall & C. Barnes—Gravel.

Till & Whitehead—Sewer manhole step irons.

Kershaw, Brassington & Co., Lancaster—Drain rods.

H. Heys, Ltd., Brooks & Brooks, I. Law, and T. Windle & Sons—Gut sets.

S. Newton & Co.—Painting.

NEWHAVEN.—For painting portions of the exterior of the workhouse, for the B.G. :—

*W. H. Callighan, Meeching-road, Newhaven	£24	15	0

NORTHALLERTON.—For making a footpath at Ainderby Steeple, for the Northallerton R.D.C. :—

*J. & G. Willoughby	£43	9	3

SALFORD.—For painting of houses in Broughton Park for the Improvements Committee of the Corporation :—

*J. Evans, Broughton	£81

SALFORD.—For materials for the Gas Department of the Corporation :—

*Holwell Iron Co.—Main pipes and connections	£808	16	0
*J. Kidd & Sons—Iron and steel	515	1	9
*Newton, Chambers & Co., Ltd.—Iron castings	773	0	0
*R. E. Roberts—Lead pipe	1563	15	0
*J. Cookson, Ltd.—Yarn, &c.	106	19	8
*Hilton & Co., Ltd.—Paints	228	16	0
*E. W. Wollaston—Oils and tallow	1025	19	2
*E. Green & Co.—Brushes	92	19	6
*Evans, Clarke & Ince—Timber	492	11	0

Seasoned

AUSTRIAN, RUSSIAN and JAPANESE **Oak**

SYDNEY PRIDAY,

KING WILLIAM HOUSE, 2a, Eastcheap, LONDON, E.C.

Depot: Wainscot Sheds, Millwall, E. *T.N.: Avenue 607.*

PATENTS.

APPLICATIONS PUBLISHED.*

108,338.—Angel Maria Fernandez : Improvements in steam boilers.

108,380.—Shada-Lite Manufacturing Co. and Frank Garfield McPherson : Lighting means for motion picture auditoriums.

108,387.—William Barraclough, Ltd., and William Tetley Barraclough : Domestic fireplace.

108,395.—Josiah Mansfield Robinson : Water flushing cistern.

108,417.—Gale Branson : Brackets or dogs to support scaffolding or other structure.

108,421.—Louis Dunker : Mortars for crushing materials.

108,435.—Hermanus Thomassen : Nut-locking d

108,446.—Evered & Co., Ltd., and Stanley Evered and Charles Willmott : Fastener for casement windows.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

TRADE NEWS.

Boyle's latest patent "air-pump" ventilators, supplied by Messrs. Robert Boyle & Son, Ventilating Engineers, 64, Holborn Viaduct, London, have been employed by the Cleveland Bridge and Engineering Co., Ltd., Darlington.

J. J. ETRIDGE, JR.

SLATE MERCHANTS, LTD.

EXPERTS IN

SLATING, TILING.

STRIPPING AND RELAYING.

Telephone: Avenue 4940 (two lines), or write

Bethnal Green Slate Works,

BETHNAL GREEN, LONDON, E.

TO CORRESPONDENTS.

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to THE BUILDER, LTD., and *not* to the Editor.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples sent to or left at this office, unless he has specially asked for them.

TYE & ANDREWS' NEW PATENT SINK TRAP is universally admitted to be THE ONLY PERFECT TRAP FOR SINKS IN DOMESTIC DWELLINGS, as fixed at the principal Institutions. Among others, Wellington Barracks, Royal College of Surgeons, etc. Prospectus upon application to the Patentees.

ANDREW & NANSON,

BRIXTON ROAD, S.W.

Telephone: Hop 1972.

Supplied by all Lead Merchants & Ironmongers

C. BURLEY, LTD.

C. BURLEY LIMITED — CEMENT MANUFACTURERS — TRADE MARK

BRICK & PORTLAND CEMENT MANUFACTURERS & FLINT MERCHANTS

Any quantity by Barge or Rail on the shortest notice

DOLPHIN BRAND SITTINGBOURNE

SITTINGBOURNE.

Telephone: No. 9 SITTINGBOURNE. *Telegrams:* "BURLEY, LTD., SITTINGBOURNE"

Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. G. F. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp-courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co. T.N. Central 9644.

Telephone: DALSTON 1348

OGILVIE & CO., Many years connected with the late firm of W. H. LASCELLES & Co., of Bunhill Row.

Mildmay Works: Mildmay Avenue, Islington, N.

EXPERTS IN HIGH-CLASS JOINERY.

ALTERNATIVE PREMISES.

ALTERATIONS AND DECORATIONS.

MAW & CO. LIMITED

BENTHALL WORKS, JACKFIELD, SHROPSHIRE.

TILES

PLAIN AND ORNAMENTAL, FOR WALLS, HEARTHS, FLOORS, EMBOSSED, GLAZED, PRINTED, PAINTED, MOSAIC & ENCAUSTIC.

MAJOLICA

MOSAIC & C.

WHOLESALE AGENTS: MESSRS. W. B. SIMPSON & SONS, 97 and 99, ST. MARTIN'S LANE, LONDON, W.C.

CONCRETE REINFORCEMENT

Royal Agricultural Show Grounds. Adelaide, Australia.

B.R.C. Fabric comes to your work ready for installation, in rolls about 7 ft. wide and of any desired length. It does not get distorted in transit; it is easy to handle on the job, easy to instal, requires little skilled labour, and simplifies supervision. This gives greatest safety.

The British Reinforced Concrete Engineering Co., Ltd.,
Head Office: 1, Dickinson Street, Manchester
Works: Trafford Park, Manchester

BRC Fabric

London: 36, Lime Street
Birmingham: 118, New St.
Liverpool: 36, Dale St.
Newcastle-on-Tyne: 2, St. Nicholas Buildings
Sheffield: 38, Church St.
Glasgow: 62, Robertson St.

B·R·C

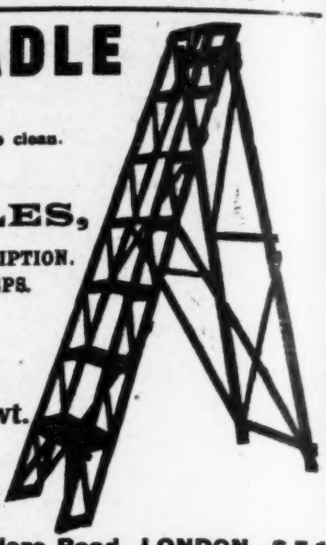
PALMER'S TRAVELLING CRADLE

PERMANENT FIXINGS WILL PAY

On all Buildings exceeding 40 ft. in height, with glazed brickwork or windows to clean.

WAR OFFICE, ADMIRALTY, AND GOVERNMENT CONTRACTORS FOR

LADDERS, BARROWS, TRESTLES, STEPS, TROLLIES & TRUCKS. EVERY DESCRIPTION.



PATENTEES of EXTENDING LADDERS, TELESCOPIC TOWERS and PLATFORM STEPS.
OUR 40-ft. TOWER for EXPORT Packs Flat 13 ft. by 4 ft. 8 in. by 3 ft.

Wholesale Manufacturers of the

"BELVEDERE" LATTICE STEPS.

PALMER'S "QUIK" PAINT, GREASE, & DIRT REMOVER, 25/- cwt.

Will not injure or prevent from drying subsequent coats of paint.

Best for cleaning Glazed Brickwork.

IN PASTE FORM. REDUCE AS REQUIRED—TO CLEAN PAINT 4 ozs. TO 1 GALLON WATER.

Chains and Slings Annealed and Tested. Scaffolding and Tackle of all kinds on hire.

PALMER'S TRAVELLING CRADLE & SCAFFOLD Co., Victoria Works, Belvedere Road, LONDON, S.E.1

Telegrams—"Wireway, Phone, London." Telephone Nos.: Hop 1156 and Hop 69. EDWIN PALMER, Manager.

MISCELLANEOUS.

First six lines 4s. 6d.; 6d. per line after.

TO CLEAR, at GREAT REDUCTION on Pre-War Prices, a Large Selection of MIRROR FRAMES and UPPER PARTS TO CHIMNEY PIECES.—Full particulars with illustrations on application. A large selection of Chimney Pieces always in stock.—BATTISCOMBE & HARRIS, Ltd., 47, New Cavendish-street, London, W. 1.

WANTED TO PURCHASE FOR CASH.—Two or Three SINGLE or PAIR-HORSE VANS.—Write A. B., 20, Phœnix-place, Mount-pleasant, London, W.C.

WANTED TO PURCHASE.—SCAFFOLDING POLES, BOARDS, PUTLOGS, and WHEELING PLANKS.—Particulars to F. G. MINTER, Contractor, Putney.

SOUND SECOND-HAND TIMBER WANTED, 3 in. × 9 in. and 4 in. × 2 in., or other Scantlings. Large quantities.—Write "F. G.," c/o Messrs. Charles Barker & Sons, Ltd., White Lion-court, Cornhill, E.C. 3.

I AM OPEN TO PURCHASE, FOR CASH, FIREWOOD, OLD TIMBER, or TIMBER ERECTIONS for Demolition.—Apply JOSEPH DRAPER, Jun., Clapham Junction, S.W. 11. Telephone: Battersea 1850 (two lines).

WANTED.—Quantity STOUT PILES, 12 ft. long, 7×9.—W. G. SMITH, Candle Works, Kingston-on-Thames.

WANTED—5 TON STEAM TRACTOR, also TRAILERS, (any size) or Over-type Steam Wagon. Cash.—G. ADAMS, Woolhampton, Berks.

FOR SALE—STEAM TRACTORS, STEAM WAGONS, TRUCKS and TRAILERS. PORTABLE and TRACTION ENGINES. Lists free. HENRY LEWIS, Cavershamroad, Reading.

100 LOADS of Good Dry SLATE and TILE RUBBISH for DISPOSAL.—ETRIDGE'S SLATE YARD, Bethnal Green, London, E. 2.

OFFICE GLASS PARTITIONS and COUNTER for SALE. Quite new. Can be seen at Bear Wharf, Bankside.—Box 358, Office of "The Builder."

SCAFFOLD POLES, PLANKS, PUTLOGS, CORDS, BARROWS, LADDERS, LIGHT RAILWAY, CONCRETE MIXER, &c., WANTED immediately.—JOHN KNOX, Builder, Evesham.

LARGE STOCK of DOORS, Mouldings, Turnery, Matchings, Plywood, Deal and Oak Flooring, etc., always on hand. Lists post free. Sawing and Moulding for the trade. Government requirements and round mouldings and poles a speciality. Low prices, good work.—BRYCE, WHITE, & CO., Deserento Sawing and Moulding Mills, Wharfroad, City-road, London, N. 1.

SAND, Ballast, Graded Ballast and Shingle, supplied in truck loads to any part of London and suburbs. Quotations from—

WM. BOYER & SONS,

Irongate Wharf, Paddington Basin. Telephone: 430 Paddington (two lines).

LIME & HAIR, MORTAR, Etc.,
of superior quality and in any quantity

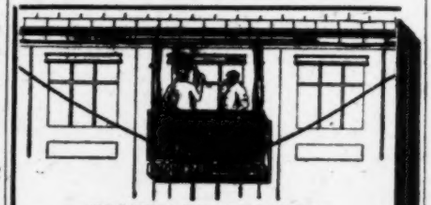
BROKEN BRICK.
CRUSHED GRANITE.
SANITARY GOODS, PARTITION SLABS

BRICKS, LIMES, CEMENTS.

SIRAPITE AND OTHER PLASTERS.

'Phone: 2860 GERRARD (3 lines).
LOWEST POSSIBLE PRICES
BUILDERS' MATERIAL ASSOCIATION.

Estd. R. SHOULER, *Manager.* [*1878.*
Chief Office: 92, Berwick St., Oxford St., W.
Depots { Western Lime Wharf, Redhill-street, N.W. / Phœnix Wharf, Redhill-street, N.W. / Finchley-road Depot: L. & N.W.R. Siding, N.W.



SCAFFOLDS ERECTED.
LADDERS, STEPS, TRESTLES.
15/- Navvy Barrows
F.O.R.

PARKER,
22, WEST END LANE, LONDON, N.W.
Telephone] [Hampstead 24.

JOHN M. **NEWTON** & SONS, LTD.
20, 21, 22 & 23, Charles St., Hatton Garden, LONDON, E.C.1.

GLASS

Plate, Sheet and Fancy Glass of every kind.

Rough Cast and Rolled Plate.

Leaded Lights.

Shop Front, Sash and Roof Glazing.

Large Stocks of Sheet Glass in crates, cases, etc.

Bevelling, Silvering, Brilliant Cutting, Drilling, Polishing, Bending, Embossing, etc.

Ventilators, Reflectors, etc.

LADDERS, BARROWS, STEPS, TRESTLES & BUILDER'S PLANT

OF EVERY DESCRIPTION

For SALE or HIRE.

SCAFFOLDS and SWING CRADLES ERECTED. *Estimates Free.*

STEPHENS & CARTER, Ltd., Green Street, Paddington, W.2

Telephone—Padd. 1717 (2 lines). Telegrams—"LADDERS, London."

SCAFFIXER SCAFFOLD LASHINGS

A British Invention ;
British Owned and Manufactured from its Inception.

TRADE MARK SCAFFIXER

ENQUIRE OF US FOR EVERY DESCRIPTION OF
BUILDERS' or CONTRACTORS' PLANT or MACHINERY
FOR SALE or ON HIRE.

TELEPHONE BRIXTON 330
TELEGRAMS SCAFFIXER, LONDON

The Patent Rapid Scaffold Tie Co., Ltd., 43, Lansdowne Road, Stockwell, S.W. 8

COLD GLUE POWDER

"CERTUS."

Unsurpassed for all glueing work. Prepared by simply mixing with cold water. Great covering capacity. Extraordinary strength with all woods, soft, hard, or oily. Absolutely heat and waterproof.

Extensively used in French Aircraft Factories

MANUFACTURED BY
CENTRAL CHEMICALS Ltd.
283, WEST END LANE,
LONDON, N.W. 6.

Telegrams: "ENTRAMICAL," WESTHAMP, LONDON.

HEATING
BY STEAM OR HOT WATER AND
VENTILATION

FOR MUNITION FACTORIES... DOPE SHOPS HANGARS... HOSPITALS, CAMPS, &c.

Schemes and Estimates prepared promptly.

CHAS. P. KINNELL & Co., Ltd., Phone: HOP 372.
65, 65a, Southwark St., London, S.E. 1.

JOINERY MANUFACTURING SPECIALISTS

SASHES & FRAMES
CASEMENT WINDOWS
STAIRCASES
MANTELPIECES
DOORS & GATES
PANELLING
&c.

EVERY DESCRIPTION OF JOINERY IN HARD OR SOFT WOODS
ARCHITECTS' AND CONTRACTORS' DESIGNS
FAITHFULLY REPRODUCED WITH ECONOMY, EFFICIENCY, AND DESPATCH

BULLEN BROS & SONS Ltd.

TELEGRAMS— "INVINCIBLE" LIVERPOOL
242 UPPER PARLIAMENT STREET
LIVERPOOL
TELEPHONES— ROYAL 1408 (3 LINES)

SHOP FRONTS
OFFICE & BANK FITTINGS
CHURCH & SCHOOL FITTINGS
SECTIONAL BUILDINGS
BELFAST PRINCIPALS
&c.

PARTRIDGE'S PATENT "ELITE" GLAZING

ABSOLUTELY WATERTIGHT, DUST PROOF, NON-CORROSIVE, NON-VIBRATING, PROOF AGAINST INTERNAL WIND PRESSURE.

The most Efficient and Economical Method of Glazing obtainable.
A Perfect Rooflight at Price of Putty Glazing without Maintenance.
Details of Connections to various forms of Roofing Free on application.
Bars, Caps, and Fittings supplied for purchasers' own fixing.
Stock-length Bars, Caps, and Fittings packed in crates ready for shipment.
Can be fixed by unskilled workmen owing to its simplicity.

25 per cent. Cheaper than other Patent Systems.
Hundreds of thousands of feet fixed on National Factories.

ALL BARS ARE DIPPED IN A BATH OF CREOSOTE UNLESS ORDERED OTHERWISE.

T. PARTRIDGE & CO., WALSALL. Phone: Walsall 433. Tel.: "Partridge Roofs."
Manchester Office: 60, Trevelyan Buildings, Corporation Street.

Your leaky roof made waterproof

With

MATEX

A PLASTIC REPAIRING COMPOUND.

MATEX mends ANY roof, of ANY material, in ANY weather—and a MATEX Mend lasts a lifetime!

MATEX is a plastic compound, made of asbestos and plastic substances. It has about the same consistency as putty, but it does not dry brittle. It retains its resiliency always. It is black in colour

MATEX is spread on with a trowel or a putty knife. Anyone can do it. MATEX sticks with tenacity. MATEX sticks instantly, hardens, and lasts indefinitely. MATEX remains elastic, consequently it will never crack

MATEX sticks instantly to ANY surface; any material—zinc, iron, slate, tin, felt, lead or glass; no matter what. The surface may be wet or rusty—that makes no difference to MATEX

And MATEX costs so little when you consider what it does, that you'll save not only your roofs but a lot of money once you get to using MATEX.

No need to take the Manufacturers' word for it, nor the testimony of MATEX users. Take the Makers' GUARANTEE—Your money back if MATEX doesn't do everything claimed for it.

T. & W. FARMILOE, Ltd.
(Matex Dept.),
Rochester Row, London, S.W.

Telephone: Victoria 4480.

· PRUFIT ·
IS
BRITISH·THROUGHOUT
and the
cement waterproofer that gives satisfactory results every time.

DAMPNESS is a destructive force to which every form of building is exposed.

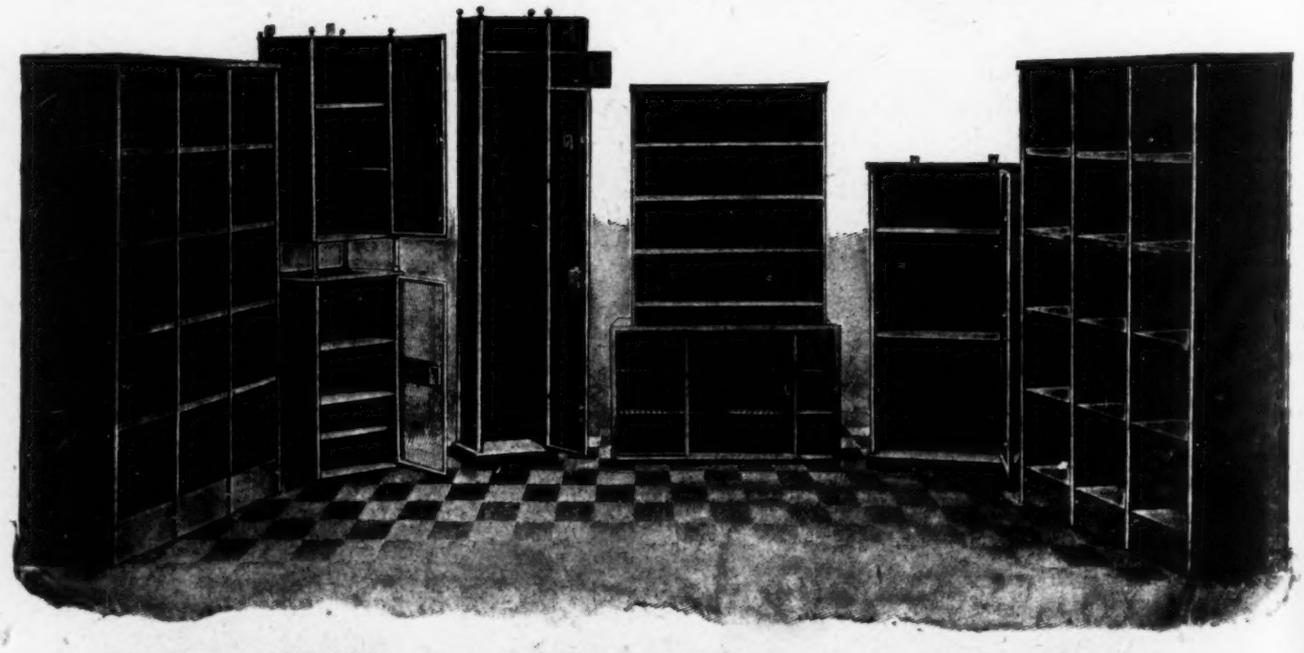
"Prufit" enables you to combat it in the most economical and efficient manner.

Write for free copy of Booklet No. "B" 6, which tells you all about it.

ROGERS·WEICH & CO LTD
· 26 Page Street ·
WESTMINSTER···S·W·

"GIBBONS"

STEEL SHELVING, BINS, CUPBOARDS, LOCKERS, ETC.,
FOR
WORKS, OFFICES, BANKS, AND WAREHOUSES.



JAMES GIBBONS, ST. JOHN'S WORKS, WOLVERHAMPTON.
London Office: FISHER STREET, SOUTHAMPTON ROW, W.C.